

EXHIBIT I

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1 00037
 2 1 A Yes, although part of what I've tried to do is
 3 2 develop a theory of liberal education that is in
 4 3 fact better than--than the prevailing views. And
 5 4 it's not that I depart all that much from people
 6 5 from whom I have in fact learned a lot. I have--
 7 6 it's not that I--I have all that unique an
 8 7 understanding.
 9 8 But--but one of things that troubles me
 10 9 is--does bear on the discussion here and on what
 11 10 we've just been talking about. And that is, I
 12 11 think the conventional understanding of liberal
 13 12 education is that one should have a little science,
 14 13 a little literature, a little history, a little
 15 14 art, a little economics, and so that you study--you
 16 15 take different subjects.
 17 16 And my problem with that way of thinking
 18 17 is that we don't teach students subjects; we teach
 19 18 them disciplines. We teach them the establishment
 20 19 way of thinking within economics--neoclassical
 21 20 economic theory--the establishment way of thinking
 22 21 in history, or in art, or in--or in science, and
 23 22 that a part of what makes education liberal--and
 24 23 then--and then what that ends up being is a kind of
 25 24 separatist education, where you--it's--it's like

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1 00039
 2 1 help students understand what--the role science has
 3 2 in a liberal education requires establishing
 4 3 connections with other disciplines and ways of
 5 4 thinking.
 6 5 So that science education should be more
 7 6 liberal than it is. It should not just narrowly
 8 7 focus students in on the establishment
 9 8 understanding of science but should broaden them
 10 9 philosophically--and, in fact, I would also add,
 11 10 religiously--by locating science in various kinds
 12 11 of cultural disputes.
 13 12 Although here, with regard to this case,
 14 13 I would be happy if they would simply give students
 15 14 a broader understanding of the relationship of
 16 15 establishment science to other--to dissenters on
 17 16 the edges of--of science to get them to see that
 18 17 there are various ways of being--being scientific,
 19 18 that the idea of science itself is one that's--
 20 19 that's controversial.
 21 20 Q This may be touching on a new subject, but--
 22 21 A Uh-huh (yes).
 23 22 Q --I perceive of it as an extension of what--
 24 23 A Okay.
 25 24 Q --you were just saying. There are two terms that

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1 00038
 2 1 encountering different items on a cafeteria line.
 3 2 I call it serial socialization. That is, you learn
 4 3 what the establishment--
 5 4 Q You don't mean C-E-R-E-A-L, right?
 6 5 A Yeah, the cereal on the cafeteria line. Oh, that's
 7 6 good. I like that. I'm going to use that, if I
 8 7 may. Thank you.
 9 8 And--and a part of--of the purpose of
 10 9 liberal education is to draw connections between
 11 10 the different disciplines, to point out the
 12 11 conflicts, the tensions, the overlaps, the
 13 12 compatibilities.
 14 13 And that's what students don't learn to
 15 14 do. They don't learn to understand what the
 16 15 relationship of the disciplines is. And the very
 17 16 intra--I mean, this is part of what philosophy
 18 17 does, is it tries to get at the--the connections
 19 18 and the relationships between disciplines so that
 20 19 we can think outside of each box in turn and ask
 21 20 larger questions about what is reasonable to
 22 21 believe, all things considered.
 23 22 And that's part of what science education
 24 23 should do, it seems to me, that it doesn't do, is--
 25 24 is not just train scientists, but to get--to--to

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1 00040
 2 1 I've encountered in this case that I think bear
 3 2 differentiation and definition.
 4 3 A Uh-huh (yes).
 5 4 Q Methodological naturalism and philosophical
 6 5 naturalism.
 7 6 A Uh-huh (yes).
 8 7 Q And am I correct that--if I can call it "mainstream
 9 8 science" or "traditional science"--
 10 9 A Uh-huh (yes).
 11 10 Q --insists on methodological naturalism?
 12 11 A Yes. That's--yes.
 13 12 Q And am I correct that some scientists and other
 14 13 thinkers have developed a philosophical naturalism,
 15 14 which is a religious or a philosophic worldview
 16 15 rather than a methodologically scientific
 17 16 worldview?
 18 17 MR. GILLEN: Object to the form.
 19 18 A Certainly, that distinction is oftentimes drawn.
 20 19 Whether it holds up in practice is another
 21 20 question.
 22 21 Q "Philosophical naturalism" means what?
 23 22 A It's the idea that all of reality can be understood
 24 23 within naturalistic categories, so that in
 25 24 principle, unlike methodological naturalism, it

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1 00041
 2 1 concludes that naturalism is--is adequate for
 3 2 explaining everything. A methodological naturalist
 4 3 would often--typically say that it--it may be
 5 4 that--that science can't explain everything but
 6 5 science should continue to be a method--to adhere
 7 6 to a methodological naturalism: Let's see how much
 8 7 we can explain that way, but maybe we can't explain
 9 8 everything in the end.
 10 9 That distinction certainly can be drawn.
 11 10 My problem, again, is that in practice the
 12 11 distinction collapsed, given the way we do
 13 12 education nowadays.
 14 13 Q Let me see if I can be more direct in trying--
 15 14 A Okay.
 16 15 Q --to go where I'm--
 17 16 A All right.
 18 17 Q --trying to go here. Methodological naturalists
 19 18 would say, "We insist on using our methodology to
 20 19 understand the natural world."
 21 20 A Uh-huh (yes).
 22 21 Q And philosophical naturalists would say, "The
 23 22 natural world is all there is;"
 24 23 A Uh-huh (yes).
 25 24 Q --"there is nothing beyond that."

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1 00043
 2 1 matter.
 3 2 A Okay. If--given the religious answer, if--if
 4 3 "religion" means answering a question that has
 5 4 religious implications--like "is there meaning?"--
 6 5 and if you say no, because you've given an answer
 7 6 to a religious kind of question, then philosophical
 8 7 naturalism, I suppose, could be called a kind of
 9 8 religion.
 10 9 I myself don't like to use "religion"
 11 10 in--in that way. For--for me, a religious view is
 12 11 a view that holds that there is some kind of
 13 12 purpose or meaning to existence beyond naturalism,
 14 13 so that naturalism simply--it--it doesn't make much
 15 14 sense to call that a religious view. But that--
 16 15 that's a view about--that's my effort to try and
 17 16 avoid using the word "religion" in an unduly
 18 17 controversial or complicated way.
 19 18 Q And forgive me, because my notes got in the way of
 20 19 my understanding. You said a religious view as you
 21 20 would view it requires that there is a meaning or
 22 21 purpose to life, did you say?
 23 22 A To reality.
 24 23 Q To reality?
 25 24 A To reality. That's right. There is a dimension to

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1 00042
 2 1 A Okay.
 3 2 Q So the philosophical naturalists would say, "There
 4 3 is no divine purpose in life"--
 5 4 A Uh-huh (yes).
 6 5 Q --"and, indeed, there is no divinity."
 7 6 A Uh-huh (yes).
 8 7 Q The philosophical naturalist would say, "There are
 9 8 no absolute moral values; there are socially
 10 9 useful"--
 11 10 A Okay.
 12 11 Q --"values." So the philosophical naturalists would
 13 12 take a religious approach--
 14 13 MR. GILLEN: Objection. I'm sorry.
 15 14 Q --in term--religion in the sense of providing
 16 15 ultimate meaning--and say that there is no ultimate
 17 16 meaning.
 18 17 MR. GILLEN: Objection--
 19 18 Q Fair enough?
 20 19 MR. GILLEN: Objection to the form. Go
 21 20 ahead. Answer.
 22 21 Q And that was so clumsy, I'll come back and do it
 23 22 again.
 24 23 MR. GILLEN: No. You know what, Chub,
 25 24 you and I both know it's a complicated subject

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1 00044
 2 1 reality or an aspect of reality that--that
 3 2 transcends what we can know naturalistically. And
 4 3 the different great world religions have defined
 5 4 that in very different senses. And in some
 6 5 religious traditions, you--you have God, and in
 7 6 others, you have nirvana, or Brahman, or the Tao,
 8 7 and something that doesn't look all that familiar
 9 8 to our idea of God within the Western tradition,
 10 9 but it's still an understanding of reality that
 11 10 transcends in some--in important ways what--what a
 12 11 naturalistic scientific worldview allows us to--to
 13 12 say about reality.
 14 13 And that's crucial to religion, to my way
 15 14 of thinking, so that naturalism doesn't become
 16 15 religious just because it gives negative answers to
 17 16 religious questions.
 18 17 Q Okay.
 19 18 A I'm--I'm not sure that much hangs on that, in the--
 20 19 in the end, even constitutionally, but--but I think
 21 20 that's the clearest use of--of the term "religion."
 22 21 Q And to wrap up this segment--
 23 22 A Okay.
 24 23 Q --is it your view that that religious--strike that.
 25 24 Is it your view that that appreciation

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for the reality of a transcendent purpose to reality needs to be brought into both science and science education in public schools?

MR. GILLEN: Object to the form.

Let me give you a qualified yes, because a straightforward yes would invariably be misunderstood. So--and again, my understanding--the--the conception of science education that I argue for is locating science, in part, historically and philosophically in relationship to other subjects, other areas of our cultural life. So that a good science education should help students understand the relationship of science to moral issues, political issues, religious concerns.

That doesn't mean that religious views should be understood to be--should be understood to provide some kind of legitimate alternatives to science, that they can become--that--that they--for example, that--that Genesis should be taught in a science class--class as a contender with establishment science, no.

Science classes should teach science. I think they should include some discussion of IDT because IDT should be considered science. At the--

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And it's the next-to-the-last paragraph. And you say, quote, "We disagree deeply in our culture about how to make sense of nature," and then the sentence continues.

(Examines paperwritings.) Uh-huh (yes).

And I want to go into each of the parts of it. Okay.

In talking about this disagreement in our culture about how to make sense of nature, are you talking about this question whether there is or is not a transcendent purpose in reality?

MR. GILLEN: Objection to the form.

Yes. But again, the--the controversy occurs on, I think, two different levels. One is the level of our culture wars, where the--the issue is oftentimes framed in terms of creationism versus evolution. And--and as I said, I--I think we need to recognize that there are alternative positions there, that the usual culture-wars rhetoric doesn't work very well.

And then there's also disagreement among--more narrowly among scholars--and, in fact, I think, among scientists--about how to make sense of nature, so--where IDT is--is one of the major

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at--at the least, students should be made aware of the controversy over whether IDT is science. But any science class should also locate students within the larger cultural conversation we're having about important things.

So, to that extent, religious, moral, and political views that science impinges on, has implications for, need to be part of the framework for locating students.

MR. WILCOX: Okay. Why don't we take a little break.

MR. GILLEN: Sure.

MR. WILCOX: We've been going for an hour.

MR. GILLEN: Certainly.

(ELEVEN-MINUTE RECESS)

(By Mr. Wilcox) If you will turn to the second page of your opinion--

(Examines paperwritings.) Uh-huh (yes).

--there's a paragraph under the heading "Critical Thinking."

Yes.

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issues.

But that--it's not--that's not the only source of that kind of conflict. It comes up with regard to fine-tuning in cosmological evolution. It comes up with regard to the origins of life. It comes up with the nature of mind and morality. There are--there are conflicts there among scholars, among philosophers and scientists and sometimes theologians, that the public is simply unaware of. So--so, you know, we've got to do a kind of two-layer analysis, I think.

Okay. You continue in the sentence, "we disagree about evolution."

Uh-huh (yes).

Is this the disagreement as to whether evolution has purpose or not, or is this the disagreement as to whether evolution explains the origin of species or not?

MR. GILLEN: Object to the form.

Well, again, there are several different disagreements. As I said, there's--there's the culture-wars disagreement, where it's evolution versus creationism oftentimes. There's a more sophisticated analysis which--which says it's not

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1 00057
 2 1 the--in the discipline to other ways of making
 3 2 sense of the world and of the--the particular
 4 3 subject at hand.
 5 4 Neoclassical theory is sort of like the
 6 5 methodological naturalism of--of the sciences.
 7 6 There's a--there's a real comparison there. I
 8 7 think most people would find--and certainly when
 9 8 I've talked with groups of people and we talk
 10 9 through this--that the kind of commitment to
 11 10 neoclassical economic theory in economics is--most
 12 11 people find appalling, other than professional
 13 12 economists. And of course, people are something
 14 13 more than that. Of course, justice questions
 15 14 should be involved in--in economics.
 16 15 So, that kind of--that's part of my work,
 17 16 too, that the kind of battles that we're looking
 18 17 at--the kind of questions we're looking at in
 19 18 science also occur in other disciplines.
 20 19 (DISCUSSION OFF RECORD)
 21 20 Q On Page 4, you have a paragraph that begins, "It is
 22 21 true that we can distinguish, in principle, between
 23 22 a methodological naturalism"--
 24 23 A (Examines paperwritings.) Uh-huh (yes).
 25 24 Q --"and a philosophical naturalism." Would you

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1 00059
 2 1 A Uh-huh (yes).
 3 2 Q --and imply, from philosophical naturalism, a
 4 3 negation of any reality beyond the natural world.
 5 4 A Uh-huh (yes).
 6 5 Q Do you agree with that?
 7 6 A Yes, I think so.
 8 7 Q Okay. Then you go on and say, "The educational
 9 8 problem is that unless students are made clear
 10 9 about this distinction, they will inevitably
 11 10 conclude that science does tell us everything that
 12 11 there is to be said about nature, and God plays no
 13 12 role in nature." What is your basis for that
 14 13 statement?
 15 14 A (Examines paperwritings.) I wouldn't write that,
 16 15 first of all, the same way, if I were going to do
 17 16 that again, because that simplifies what--what
 18 17 my--my argument is. And the problem is this: We
 19 18 can draw that distinction, methodological and
 20 19 philosophical naturalism, in principle, easily
 21 20 enough. And that's fairly straightforward. I
 22 21 don't think--
 23 22 Q And we can explain it to students, too.
 24 23 A We can--we can explain it to students. The problem
 25 24 is that it's a--we don't explain--we don't explain

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1 00058
 2 1 agree that the methodological naturalism that you
 3 2 refer to there is what we have been referring to as
 4 3 classical science or traditional science?
 5 4 MR. GILLEN: Object to the form.
 6 5 A The "traditional" and the "classical" seem to me to
 7 6 be not the right words to use, because classical
 8 7 and traditional science did involve design--have
 9 8 design explanations.
 10 9 Q My--
 11 10 A It's peculiarly modern science--
 12 11 Q Modern science.
 13 12 A --that wants to dispense with--
 14 13 Q Okay.
 15 14 A --naturalistic--or design explanations.
 16 15 Q So "methodological naturalism" would be another way
 17 16 of referring to modern science?
 18 17 A Yeah.
 19 18 Q And--
 20 19 A The dominant view, yes.
 21 20 Q And the philosophical naturalism, you say, denies
 22 21 that there is any design or supernatural causes in
 23 22 the world.
 24 23 A In reality.
 25 24 Q But I would take it further--

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1 00060
 2 1 it to students in a--in a compelling--in a
 3 2 compelling way. And to do it in a compelling way
 4 3 to get them to see the point of it is, I think,
 5 4 difficult to do.
 6 5 And granted, you--you can--you can make
 7 6 the distinction in--in two sentences. Okay. But
 8 7 then we go and teach them for a semester or an
 9 8 academic year, using science understood in terms of
 10 9 methodological naturalism, and that two-sentence
 11 10 explanation of the distinction gets lost because--
 12 11 because of the over--overriding power of--of what
 13 12 they learn afterwards through their whole study of
 14 13 science.
 15 14 Now, that's not to say that it isn't
 16 15 important to draw that distinction. It is
 17 16 important to draw that distinction. It's just that
 18 17 that doesn't really go very far. It doesn't go
 19 18 nearly far enough to really get students to grapple
 20 19 with the--with the kind of philosophical issues
 21 20 that--that underlie the distinction, which is--is
 22 21 part of what a liberal education should do, and--
 23 22 and to show how drawing that distinction relates to
 24 23 these larger questions about our cultural
 25 24 disagreements over the extent to which science can

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1 00061
 2 1
 3 2 Q explain reality.
 4 3 You say unless students are made clear, quote,
 5 4 "they will inevitably conclude that science does
 6 5 tell us everything that there is to be said about
 7 6 A nature, and God plays no role in nature."
 8 7 Q Yeah. Well--
 9 8 Why do you say they will inevitably conclude that?
 10 9 A What is your basis?
 11 10 I--I should have said they will naturally conclude
 12 11 that, because I--I suppose it isn't inevitable that
 13 12 they will conclude it. But that will be the--the
 14 13 natural conclusion: Well, science doesn't tell us
 15 14 anything about--and--and when I said that I
 16 15 wouldn't have written it the second way, I--I
 17 16 wouldn't have--I wouldn't have written it the same
 18 17 way if I were doing it now, because I--I see a
 19 18 complication that obviously didn't occur to me when
 20 19 I wrote it. And that is, it's not just that God
 21 20 plays no role in nature, but the design plays no
 22 21 role in nature. And I--and I want to be very
 23 22 careful to distinguish those two questions.
 24 23 And students learn--we require them to
 25 24 take, if they're going to university, four years of
 science in high school--

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1 00063
 2 1 Q --in that last answer to necessarily be a reference
 3 2 to what we've been talking about as intelligent-
 4 3 design theory.
 5 4 A Uh-huh (yes).
 6 5 Q Did you understand it to refer to intelligent-
 7 6 design theory, or, more broadly, to the question of
 8 7 a transcendent god providing a purpose in life--
 9 8 MR. GILLEN: Objection to form.
 10 9 Q --or--or in reality?
 11 10 A I'm not sure that I understand the question.
 12 11 Q Okay. We've been talking design, I think, in two
 13 12 different senses.
 14 13 A Uh-huh (yes).
 15 14 Q One is the narrow, inferential, explanatory--
 16 15 A Uh-huh (yes).
 17 16 Q --sense of intelligent-design theory--
 18 17 A Right.
 19 18 Q --and the other is--and perhaps we haven't been
 20 19 talking about it; it's only me thinking fuzzily
 21 20 about it--design in the sense of a purpose--
 22 21 A Uh-huh (yes).
 23 22 Q --of reality--
 24 23 A Uh-huh (yes).
 25 24 Q --that purpose being informed by a transcendent

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1 00062
 2 1 Q Can--I want to focus on high school here.
 3 2 A Yeah. Four years of--of high--
 4 3 Q Okay.
 5 4 A --high-school science, and four years of science
 6 5 shaped by methodological naturalism. And it--it
 7 6 conveys to them, unless a good deal of time and
 8 7 effort is spent, the idea that science can actually
 9 8 tell us everything that's to be said about nature.
 10 9 And--and that's controversial. And that
 11 10 inevitably--naturally, at least--slides over into a
 12 11 kind of philosophical naturalism. The only way to
 13 12 avoid that is to give them some kind of substantive
 14 13 examples of--and which a liberal education
 15 14 requires--of how science might have limitations
 16 15 and--and how design might figure into our
 17 16 understanding of nature, or even how nature, as
 18 17 understood by modern science, might relate to God.
 19 18 MR. WILCOX: May I have that repeated,
 20 19 just the last twenty words?
 21 20 (Whereupon, the sentence at Lines 11 through 17
 22 21 on this page was read back.)
 23 22 Q (By Mr. Wilcox) I did not understand your
 24 23 reference to design--
 25 24 A Uh-huh (yes).

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1 00064
 2 1 god.
 3 2 MR. GILLEN: Object to form.
 4 3 Q Is that consistent with your understanding?
 5 4 A So, there are three possibilities here. One is the
 6 5 narrowest sense that--where a scientist might
 7 6 suggest a design explanation with regard to some
 8 7 fairly discrete phenomenon--how cells work, for
 9 8 example.
 10 9 And then secondly, there's a larger
 11 10 question about whether that provides some kind of
 12 11 evidence for claims that there is a purpose in
 13 12 nature that--that--or a design in nature.
 14 13 And then there's a third level, which is,
 15 14 how do we explain that design in nature? Do we
 16 15 appeal to a supernatural god--to a god or a
 17 16 supernatural being who causes it?
 18 17 My argu--my position is that--of course,
 19 18 that you can make design explanations, and you can
 20 19 hold the position that there's design in nature
 21 20 apart from any commitment, theological commitment,
 22 21 to a god or to a supernatural being, that those are
 23 22 distinguishable--conceptually distinguishable kinds
 24 23 of--of questions. All the time, in--in our
 25 24 ordinary everyday relationships, and indeed in the

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practice of science, we talk about things being designed with--without presupposing that--that we have to use religious language or theological language in doing that.

So, certainly, we can talk of the idea of design as conceptually independent of the--of the idea of God. But, of course, when we talk about the design inherent in cells or in fine-tuning after the Big Bang, of course, the big question is, how does that design get to be there? But it's still a conceptually discrete question. You don't have to have a religious--you--you can--you can still have evidence for and make a good argument for design without having any kind of theological or religious commitments, it seems to me.

So I--I want to be careful to distinguish design questions from religious questions. And--and that's what allows me to say that design questions should be allowed in a somewhat enlarged science. That doesn't run us the risk of making science into a quasi-religious endeavor or a theological endeavor.

Can you identify for us one intelligent-design theorist who claims that the source of the design

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But there certainly are a variety of philosophical positions and very liberal religious positions which hold that there's design in the world but that it's not there because of a supernatural god, the kind of god that's part of orthodox religious traditions: Aristotelian views; process-theology, process-philosophy views; some feminist views of nature.

So--so--and again, I want to draw that sharp distinction between design on the one hand and supernaturalistic religion on the other. Design is supernaturalistic in sense "B." Design isn't allowed, given the constraints of methodological or philosophical naturalism, but you can still have design without committing yourself to supernaturalism "A," which is a designer--an independent supernatural god. Next question.

Do you know of any intelligent design theorists who are not also practicing Christians?

I don't know the religious backgrounds of many of them. I know Behe's a Catholic. I don't know if he's a good Catholic or a bad Catholic. That's his tradition. And I know that Phillip Johnson has made various kinds of remarks that suggest he's

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was some extraterrestrial alien?

Now, I know that Francis Crick argued that maybe life arose here as a result of intelligent beings elsewhere in the universe sort of implanting it. But he, of course, wasn't an intelligent-design theorist.

I guess I just don't--I don't see the point. No, I mean, intelli--but intelligent-design theorists claim that in the--claim that they can do--that they can make design arguments apart from theological convictions or--or commitments. And that makes perfectly good sense to me.

Undoubtedly, some, maybe many, maybe most of all them, do have religious convictions. But still, you can distinguish the--the design argument, the evidence for the design argument, from the theological position which they may or they may not hold. So that intelligent design as science doesn't imply or require any kind of religious worldview or conviction. It--it may well be that the only way--or that the best way--maybe I should say "the best way." It may well be that the best way of explaining the design is in terms of a supernatural god.

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religious in some deep sense. But, I mean, that's all--about all I know about their private religious views.

You pose the question, in your report, at the top of Page 5, "Is IDT science?"

Uh-huh (yes).

And you suggest, quote, "Arguably, what should be taken seriously as science is in part, at least, a matter of what good scientists take seriously." That strikes me as fairly circular. How do you identify what is a good scientist if you don't have a notion of what science is?

Well, it--it moves the focus from science in the abstract to what particular individuals do. So, first of all, it's important to point out the "is in part," because it's in part a matter of something else, which is philosophical considerations.

But one way of--of deciding what good science is is to look at what scientists do, and that shifts the focus: Okay, then, what makes for a good scientist? And--and the answer there is, given our ordinary understanding of science, it's somebody who's gotten a Ph.D. from a research

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1 00073
2 1 into culture-wars debates. It does that in part.
3 2 But it also--and more importantly, more
4 3 relevantly--ties into, I think, important
5 4 discussions on the edges of science about how to
6 5 define science, and to a tremendously important
7 6 question of whether there's design in nature and in
8 7 the world.
9 8 Now, that's a perennial philosophical
10 9 question. It's not just a religious question.
11 10 Philosophers have debated that quite apart from
12 11 anything that looks like traditional organized
13 12 religion. And--and so it's--I mean, certainly, the
14 13 design question can be understood as a secular
15 14 philosophical question, but insofar as it's a
16 15 question to which collecting evidence and
17 16 performing experiments is--is relevant, it can also
18 17 be a scientific question, I think.
19 18 Q Okay. Let me continue, because we get to some of
20 19 this.
21 20 A Okay.
22 21 Q You ask--with reference to how many scientists take
23 22 IDT seriously--
24 23 A Uh-huh (yes).
25 24 Q --What is (or has been) their standing within

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1 00075
2 1 How familiar are they with establishment
3 2 science? What kinds of credentials do they have
4 3 because of their--their educations and things that
5 4 they might have published apart from--from IDT?
6 5 And it's a more-or-less kind of question. That's
7 6 relevant to--to judging--and--and again, how much
8 7 of establishment science do they have to reject?
9 8 If you're a creation--an old-fashioned
10 9 creation scientist and have to give up carbon-14
11 10 dating, and the age of the earth, and dinosaurs,
12 11 and all kinds of other things like that, you know,
13 12 that's an argument for saying that just can't be
14 13 considered science. But I take it that most of the
15 14 IDT people don't do that, that they accept an awful
16 15 lot of science.
17 16 Q Do they accept that man evolved from lower life
18 17 forms?
19 18 MR. GILLEN: Object to the form.
20 19 A I don't know. I suppose I have to say I don't know
21 20 the answer to that. I know in--in at least a few
22 21 cases--I mean, Behe, I know, accepts evolution;
23 22 he's an evolutionist. And as a matter of fact, he
24 23 said--in a New York Times piece this spring, he
25 24 says most IDT theorists are evolutionists; it's

PAGE 74

1 00074
2 1 establishment science?"
3 2 A Yeah.
4 3 Q Other than Michael Behe, can you identify for us
5 4 one intelligent-design theorist who has a standing
6 5 within establishment science? I'm not talking
7 6 about mathematics; I'm talking science.
8 7 A I--I guess, if the question is "Are there people
9 8 who established a relationship and published in
10 9 science before they became intelligent-design
11 10 theorists?" I--I don't know. You know, about the
12 11 best that I can do in response to that question is
13 12 to say I'm not a scientist, and I do observe this
14 13 debate more through the kind of general literature
15 14 than through my reading of scientific journals or
16 15 the science--the science itself.
17 16 Q You continue: "What kinds of research have they
18 17 done?" I--I assume here you're talking about IDT
19 18 scientists and what kinds of IDT research have they
20 19 done?
21 20 A No, not necessarily. Have they done--but here,
22 21 it's important--again, I mean, anybody who gets a
23 22 Ph.D. from a research university is going to
24 23 have--have done research in establishment science,
25 24 and so that's crucial.

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1 00076
2 1 just that they think the design has to enter into
3 2 the question of evolution. So, in some sense, yes,
4 3 we descend from other life forms. It's just that
5 4 you can't explain that evolutionary process in
6 5 neo-Darwinian terms--or you can't explain it fully
7 6 in neo-Darwinian terms.
8 7 Q Do IDT theorists tend to believe that the great
9 8 majority of species were--suddenly appeared--
10 9 MR. GILLEN: Objection to form. Spec--
11 10 sorry.
12 11 Q --with no record in the fossil record?
13 12 A I--
14 13 MR. GILLEN: Objection to form.
15 14 Speculation.
16 15 A I--I don't know.
17 16 Q Do you remember reading that in Pandas and People?
18 17 A No.
19 18 Q You pose the question "To what extent does the
20 19 theory draw on accepted science?" "Draw on" is a
21 20 little vague. Is it your view that intelligent
22 21 design draws on methodological naturalism?
23 22 A It certainly draws on--I mean, it certainly draws
24 23 on--on other aspects of science. And insofar as--
25 24 as pretty much all science is defined by

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methodological naturalism, it certainly draws on the conclusions of that science to--as--as part of its case.

I mean, again, to think of Behe, he doesn't--you know, this doesn't come all out of the blue, his theory. He's--he locates his design arguments in the context of very deeply textured understandings of the cell, which is drawn from--from establishment science. So it's--it's not, again, like the old-fashioned creation scientists, who dismiss so much of establishment science and--and make arguments that are unrelated to traditional or--or modern establishment science. It--again, it just seems to me to be quite a different kind of--of thing.

Let's try to get at this another way, perhaps. Do you understand intelligent-design theory to be a testable and tested hypothesis?

Yes, although the tests certainly would be somewhat different from those employed in methodolo--within a methodological naturalism. They may be statistical tests, like Dembski--Dembski offers, or, you know, the notion of irreducible complexity that Behe uses. I mean, that's certainly--that's--

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Do you know the context in which it appeared? Was it a paid ad, or an Op-Ed submission--

Oh, I--

--or a--

No, it was--it was a paid ad. Sure.

Okay. And do you know who paid for the ad?

No. I could guess, but, no, I don't know. I don't--I don't remember.

The Discovery Institute?

I--that would be my guess, but I--

Okay.

--don't know.

MR. WILCOX: Off the record.
 (DISCUSSION OFF RECORD)

MR. WILCOX: Okay. Back on.

(By Mr. Wilcox) You continue in your list of aids or tests: "To what extent is it an ad hoc theory?" Uh-huh (yes).

You'd better explain what you mean by that for me. (Examines paperwritings.) Well, the next sentence explains it. That is, "Does it grow honestly out of the evidence rather than out of prior ideological or religious commitments?" An explanation that--that really doesn't grow out of

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it's a way of testing an idea, but it's not the--the standard way of--of methodological naturalism.

The--the arguments for fine-tuning in--in cosmology, again, rely on very sophisticated kinds of mathematical and statistical analyses to suggest that the nature of our universe--the idea that it is by accident the kind of universe that produces life is--are extremely improbable. Well, I mean, that's a way of testing, I think, a design claim, but it's not the way of testing that's found, I think, in much science. Although here I'm really going beyond what I can talk about, because I know various kinds of scientists use various kinds of statistical analyses to--to support causal claims, for example. So I--you know, I probably should acknowledge my limitations, though I--

Okay. You referred earlier to seeing a list of two or three hundred names--

Yes.

--in, did you say, The New Republic?

I know The New Republic, and--and I--my impression is that that list appeared in a couple of other places, maybe The New York Times. I--I saw it in The New Republic.

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 15 14 A
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 19 18 A
 20 19 Q
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 23 22 Q
 24 23 A
 25 24 Q

evidence but grows out of convictions that someone already has would be an ad hoc theory.

Okay. So those are two connected--

Yes, that's right.

--questions?

I should have said, "That is, does it grow out," but--and--and let me--I--is your question does design--is design theory ad hoc? No.

I'm going to go to the next--

All right. I'll wait for your question.

--question. To answer whether it grows honestly out of evidence imports a notion of trustworthiness--

Yeah.

--that I'm not sure I can address. Do you feel that you have insights as to the honesty vel non of the IDT theorists?

I don't have any deep insight into--

Okay.

--into their honesty, or into the honesty, I should say, of--of--

Neo-Darwinists?

--some neo-Darwinists. That's right.

Okay.

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'Cause you can make the same kinds of arguments in--in either case. I mean, people say that--that--a lot of people say that design theorists--theory really grows out of religious convictions, and some people say that neo-Darwinism really grows out of atheistic convictions.

Darwin--Darwin himself couldn't believe in a personal god after the death of his ten-year-old daughter. You know, does that have something to do with the fact that he now can ex--that--that he wants to come up with an explanation of the world independent of a--of a theistic god? I don't know. My suspicion is that probably Darwin's theory did grow out of a--not out of his re--his personal rejection of a religious god. But certainly there are some neo-Darwinians who probably hold their views at least in part because they can't tolerate the idea of a god.

So how do you assess the honesty? I don't know. Certainly, many neo-Darwinians, I think, come to their views because that's their best reading of the evidence, rather than out of any kind of prior religious convictions. And I--and I suspect that at least some IDT theorists,

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22 21 Q
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25 24 A

that question isn't opened up for discussion, then--then you get what I call scientific fundamentalism, whereby students are expected to accept methodological naturalism more or less as a matter of faith, or, that is to say, of trust in the scientific establishment, rather than any kind of reasoned conviction about it.

The only way to--to have a re--a reasoned position on methodological naturalism is if you understand something of the alternatives or the--the debate about the adequacy of methodological natural--methodological naturalism going on in our larger intellectual life.

To some extent, intelligent-design theorists reference things like Mount Rushmore.

Yeah.

You're familiar with that--

Yeah.

--sort of "I know it when I see it"?

Uh-huh (yes).

That, of course, presupposes that the intelligence underlying the design is an intelligence much like human intelligence, doesn't it?

Yeah. Well, I mean, that analogy does, yes. Or by

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maybe most of them, also come to their convictions out of an independent assessment of the evidence. Maybe they're open to design explanations because of religious convictions that they have, but--but that's a different question from whether those religious convictions actually drive or shape their conclusions as scientists.

Okay. You continue that "whether or not IDT is good science is in part, at least, a philosophical question."

Yeah.

And you then state, "Modern science has prided itself on its openness to new evidence and to the potential falsification of its theories." Would you agree that modern science, however, is not open to different methodologies; it insists on--

Yes.

--methodological naturalism?

Yes. And that then becomes the kind of philosophical question that it's important for science--scientists themselves and students who study science to be educated about: Is methodological naturalism--should methodological naturalism define modern science? Because if--if

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analogy, yes.

Which connotes that man is created in the image of God, does it not?

Well--

MR. GILLEN: Object to form.

--no, because, again, I want to distinguish between supernaturalism "A" and supernaturalism "B" simply because there are some folks in the history of thought who are supernaturalists "A," and there are some folks who are supernaturalists "B," and--and intelligent design is compatible with either.

It doesn't require God understood in traditional terms of Judaism, Christianity, and Islam. It could be simply the presence of design in the universe in ways in which other philosophers have understood as--as a possibility but that doesn't rely on--on the idea of God. So--and that's a crucial distinction. I--I don't want to lang--we don't--we don't necessarily have to have God just because we have design.

I'd like to switch gears and talk about the educational value--

I'm happy to switch gears.

--of the Dover Area School District--

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SHEET 22 PAGE 85

1 00085
2 1 A Okay.
3 2 Q --update of the biology curriculum. The biology
4 3 curriculum was updated to include a preliminary
5 4 statement as follows, quote: "Students will be
6 5 made aware of gaps, slash, problems in Darwin's
7 6 Theory and of other theories of evolution,
8 7 including, but not limited to, Intelligent Design."
9 8 What are the--do you have any understanding as to
10 9 what is meant by the "gaps, slash, problems in
11 10 Darwin's Theory?"
12 11 A (Examines paperwritings.) I don't know what--since
13 12 I haven't read any literature or talked with any of
14 13 the people--what the authors of that statement
15 14 mean. I--I can speculate as to what it might be or
16 15 what I would take them to be, the--the
17 16 gaps/problems.
18 17 Q Would it, in your mind, be a reference to gaps in
19 18 the fossil record, for example?
20 19 A It could be. That's certainly one of the--the
21 20 kinds of gaps that oftentimes are mentioned,
22 21 particularly in--in intelligent-design literature.
23 22 Q And could it be also the difficulty that evolution
24 23 has in explaining the crossover from chemistry to
25 24 life?

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1 00087
2 1 know what in particular the authors meant.
3 2 Q Well, let me just test--see if I understand--strike
4 3 that.
5 4 I'd like to ask you if you have an
6 5 understanding as to the structure of this sentence.
7 6 One way to read it is that students will be made
8 7 aware of gaps/problems in Darwin's theory and that
9 8 they will be made aware of gaps/problems in other
10 9 theories of evolution.
11 10 A Yes.
12 11 Q Do you read it that way?
13 12 MR. GILLEN: Objection. Form.
14 13 Speculation.
15 14 A (Examines paperwritings.) I'm puzzled as to that
16 15 sentence, too. I--that seems to be--do you want to
17 16 suggest another reading to it?
18 17 Q Another reading might be "Students will be made
19 18 aware of gaps/problems in Darwin's theory, and
20 19 they"--
21 20 A And then made aware of other theories.
22 21 Q --"and then they will also be made aware of other
23 22 theories of evolution, including intelligent
24 23 design."
25 24 A Well, I suspect that's what it means because--

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1 00086
2 1 A That would certainly be one of the possibilities,
3 2 yes.
4 3 Q Can you think of any other gaps, slash, problems in
5 4 Darwin's theory?
6 5 A Well, I think another big one would be the
7 6 development of--of sexual reproduction. My
8 7 understanding is that--this is nothing I'm an
9 8 expert on, but my understanding is that that does
10 9 create a large problem, how you get sexual
11 10 reproduction where only the--half the genes of--of
12 11 each parent become transmitted to the offspring,
13 12 that that's not what neo-Darwinism would--would
14 13 lead one to think should happen. So how do you--
15 14 how do you get bisexual reproduction? That might
16 15 be one. I don't--I don't know.
17 16 I mean, certainly, there are particular
18 17 kinds of cases, the things that Behe talks about,
19 18 in--in cellular biology and biology. There's--
20 19 there's the kind of problem that Gould tried to
21 20 address with punctuated equilibria, the rapid
22 21 transitions in evolution. I suspect that's
23 22 probably one. And then the absence of--of fossil--
24 23 intermediate fossils in those kinds of cases. I
25 24 suspect those are the kinds of things, but I don't

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1 00088
2 1 Q The latter?
3 2 A Right, probably, but--but I don't know.
4 3 Q Okay.
5 4 A I don't know.
6 5 Q In your view, is intelligent design another theory
7 6 of evolution?
8 7 MR. GILLEN: Objection. Form.
9 8 Speculation.
10 9 A Well, I mean, I--my impression is that at least
11 10 some, Behe says most, intelligent-design theorists
12 11 accept evolution. The question is the mechanism of
13 12 evolution. I don't know whether that's the case.
14 13 I--I just don't know whether most intelligent-
15 14 design theorists accept evolution in--in some form.
16 15 Well, I don't know.
17 16 Q Okay. So, if the school board had in mind that
18 17 intelligent design was an alternative theory of
19 18 evolution to Darwinian theory--
20 19 A Uh-huh (yes).
21 20 Q --you would say that that's not consistent with
22 21 your understanding of intelligent design?
23 22 A I'm sorry. Say that again? If--
24 23 Q If the school board--
25 24 A Uh-huh (yes).

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SHEET 25 PAGE 97

1 00097
 2 1 A I--I think that neo-design--pretty soon, we'll have
 3 2 neo-design theory.
 4 3 Q We already do.
 5 4 A [REDACTED]
 6 5 [REDACTED]
 7 6 [REDACTED]
 8 7 [REDACTED]
 9 8 [REDACTED]
 10 9 [REDACTED]
 11 10 [REDACTED]
 12 11 [REDACTED]
 13 12 [REDACTED]
 14 13 [REDACTED]
 15 14 [REDACTED]
 16 15 [REDACTED]
 17 16 [REDACTED]
 18 17 [REDACTED]
 19 18 But still, what intelligent-design
 20 19 theorists have come up with is very suggestive
 21 20 and--and, I think, significant, in part because of
 22 21 its implications, and particularly for its--the
 23 22 questions it raises about the nature of science and
 24 23 whether science needs to be defined more broadly.
 25 24 Q Can we agree that, as you understand it,

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1 00099
 2 1 fine-tuning arguments that have received a lot of
 3 2 discussion among cosmologists and philosophers.
 4 3 Q Just--
 5 4 A At one end--
 6 5 Q Just so we are--are communicating, "cosmology"
 7 6 meaning how the universe got to--
 8 7 A Yes.
 9 8 Q --be the way it is?
 10 9 A Yeah. In the--in the wake of the Big Bang, the
 11 10 very extraordinary set of coincidences that
 12 11 allowed--that made this universe a universe that in
 13 12 the end produces life. The--the extent to which
 14 13 cosmologists and defenders of the naturalistic
 15 14 worldview have to go to to re--to discredit that
 16 15 idea usually requires the appeal to an infinite
 17 16 number of universes, which is an extraordinary move
 18 17 to make.
 19 18 So--so, you--you get a kind of plausible
 20 19 design argument out of fine--cosmological
 21 20 fine-tuning. And on this end, thirteen billion
 22 21 years later, there's--there's a fair amount of--
 23 22 secular philosophers oftentimes reject naturalistic
 24 23 explanations of the mind. One doesn't have to be
 25 24 religious, by any means, to believe that naturalism

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1 00098
 2 1 intelligent design is not an explanation of the
 3 2 origin of life in the sense of life going from
 4 3 innate chemistry to living matter?
 5 4 A I don't think that there's a complete theory there.
 6 5 There's--that's my impression. Again, I mean,
 7 6 I'm--I'm a philosopher looking at this literature
 8 7 from some distance, but my impression is that
 9 8 there's not a complete theory of how design figures
 10 9 in at all stages of evolution, that there are some
 11 10 gaps, some problems for Darwinists, and there are
 12 11 some particular places where design looks like a
 13 12 pretty obvious explanation where there are no
 14 13 competing Darwinian explanations. So that there's
 15 14 kind of the sketch of a--of an alternative theory
 16 15 that's--that's available. But--but, obviously, a
 17 16 lot of work still needs to be done to fill in that
 18 17 sketch.
 19 18 One other thing that I'd say here, too,
 20 19 that seems to me to be important, and--and that is
 21 20 that, I mean, one of the reasons that I take design
 22 21 theory seriously as a possible explanation,
 23 22 competing explanation, is that it seems to me that
 24 23 you can make a fairly strong case for design in
 25 24 cosmological evolution, the kind of anthropic

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1 00100
 2 1 is inadequate to explain the mind, that you need--
 3 2 that--that mind is something that requires a quite
 4 3 different kind of explanation than modern science
 5 4 and naturalism can--can provide.
 6 5 So that at both ends of our thirteen-
 7 6 billion-year history, you've got design that--that
 8 7 oftentimes is--is argued for on secular grounds
 9 8 rather than religious grounds. So that the
 10 9 intervening stages of how life came to be and--and
 11 10 biological evolution--that--that there are design
 12 11 explanations which are now being made available
 13 12 seems to fit a larger pattern than--so, in part--
 14 13 that's one of the reasons that I take it seriously,
 15 14 is that it--it fits that larger pattern, and you
 16 15 don't just look at the--you don't have to just look
 17 16 at the kinds of arguments that Behe makes about
 18 17 cells. That's an important piece of the puzzle,
 19 18 but--but the puzzle's a big puzzle.
 20 19 Q Spanning thirteen billion years?
 21 20 A Spanning thirteen billion years, yeah, that's
 22 21 right.
 23 22 MR. GILLEN: Let the record reflect it is
 24 23 not a young earth.
 25 24 THE WITNESS: Yeah.

1 00129 things when they're in tenth, and so on. And--and
2 1 you have--you have to balance that with arguments
3 2 that science educators would make about what the
4 3 proper sequence should be in teaching students the
5 4 sciences. And ninth grade isn't too early to give
6 5 them some sense of what's at issue. So, you know,
7 6 there are a lot of variables that you weigh when
8 7 you decide what--what to teach them when.
9 8

But, yes, in principle, it would be nice if students were a little older and more mature and better able to understand some of the issues than they are in--in ninth grade. But then you might have to teach physics in ninth grade, and then you couldn't make the--they wouldn't understand some of the alternatives there. So, you know, I don't know how you sort that out.

how you sort that out.

Q. Now, the bottom of page 3 of your report says, "I have some statements here that I think are very important."

A. Yes.

Q. Examines paperwritings. Uh-huh (yes). Okay.

A. Yes.

Q. Now, because scientific theories can't be proven, they're speculation. Is that right?

A. Yes.

Q. I think some people who teach about evolution

1 00131
2 1 Q --"to teach students that most scientists believe
3 2 that neo-Darwinism is a confirmed theory."
4 3 A Yes.
5 4 Q And then you continue by saying, "Still"--which I
6 5 interpret as kind of a "however"--"the
7 6 distinction"--
8 7 A (Examines paperwritings.) Yes, you're right.
9 8 That's a still--that's a "however" "still."
10 9 Q --"the distinction rightly suggests that because
11 10 neo-Darwinism is a theory, its confirmation rests
12 11 not simply on observation"--
13 12 A As do facts.
14 13 Q --"but on a wide range of complex considerations
15 14 which are potentially open for reinterpretation."
16 15 A Yes.
17 16 Q Now, you lost me there, because I thought
18 17 confirma--theories are confirmed by observation and
19 18 not by a wide range of complex considerations.
20 19 A Oh. Facts--facts are things that we observe
21 20 directly. Theories hinge on all kinds of things we
22 21 can't observe directly.
23 22 So that--I mean, it is a fact that the cup
24 23 is right here. (Indicating.) I can observe it
25 24 directly. But that--the fact that the cup is made

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So the effort on the part of some opponents of evolution to say that it's a - it's a - it's more theory, I think, missed the important scientific point that theories can be confirmed.

continued:
Okay. And then you say, "I believe it is appropriate for science texts"--and, I assume, science teachers--
Uh-huh (yes).

1 00132
2 1 out of electrons and protons and neutrons and photons and, you know, all of those things--that's
3 2 a theory. That's--that has to do with atomic
4 3 theory. And--and I can't observe any of that stuff
5 4 directly. That's a--that hinges on all kinds of
6 5 scientific laws and--and complicated theories,
7 6 which have implications for our observations but--
8 7 but go way beyond our observations.
9 8
10 9 So that the theory--neo--neo-Darwinism as
11 10 a theory rests on a whole set of complex
12 11 considerations and complex kinds of arguments and--
13 12 and evidence. We can't observe evolution. And--
14 13 and that's important, because factual judgments can
15 14 be confirmed directly by virtue of our
16 15 observations; theories can be more or less
17 16 confirmed, but they go way beyond our immediate
18 17 observations.
19 18
20 19 So, most scientists, I think, believe
21 20 that neo-Darwinism is a confirmed theory. Now, I
22 21 would say probably--and I perhaps should have said
23 22 that--that its confirmation has a high degree of
24 23 probability for most scientists. Most scientists
25 24 accept it as a confirmed theory.
But because--but there's still a point to

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the kind of objection that some people make to--to evolution, because its confirmation rests on a whole set of complicated considerations that are perhaps open to alternative interpretation, namely design interpretations.

Okay.

But--but I think that students should be taught--you know, I'm not in favor of--of balanced treatment in the sense of giving equal time to alternative theories. And in my ideal biology textbook, you know, you don't give equal time to Biblical creationism, or--or just limiting us to scientific views, to design theory and to establishment science, but, of course, establishment science has got to receive most of the--the time and--and--pages in the textbook and hours in the--in the class. But you can't exclude legitimate alternatives.

And so design theory has to be taken at least seriously enough so students are made aware of it and given, ideally, some sense of what it is. Short of that, the kind of disclaimer that Dover wants to have seems to me to be a very, very modest step in the right direction.

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 25 24 Q

textbooks somehow or another conveyed the idea that the--that the school board was on the side of--or was--was opposed to--to teaching--teaching evolution, in spite of the fact that the school board chose the textbooks, which, as he acknowledged, had hundreds of pages on evolution.

So, I mean, it's ludicrous to attach that much importance to the sticker--which also, of course, means, you know, why are you--all so upset about it?--because it--it doesn't have that kind of cosmological import.

But--but it serves the--the goal in a--in a kind of mini--minimal but important way of--of making students aware of the fact that there are alternatives. And that in itself is worthwhile even if it isn't nearly as--as--have the kind of substantial implications that it--that it should.

I mean, as I said, I would have students learn something much more about the philosophical and historical issues relating to design and--and methodological naturalism and neo-Darwinism than is--than is usually done, but at least make them aware of the fact that there's a controversy.

Okay. The controversy that you're referring to in

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1 00134
 2 1 Q
 3 2 A
 4 3 Q
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 13 12 Q
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Under the heading "The Present Case"--(Examines paperwritings.) Yes.

--you say, "By making students aware of the controversy surrounding Darwin's theory of evolution, including ID?, the Dover School District is promoting legitimate, secular, pedagogical goals and enhancing their science education and student learning." Given some of the ambiguities, inconsistencies, problems, and gaps that we've noticed in the--

Yeah.

--board's statement, and the fact that it is just read and then abandoned for the rest of the--

Yes.

--semester, do you think this might be an overstatement here?

(Examines paperwritings.) It is promoting a legitimate, secular, pedagogic--pedagogical goal, and it is minimally enhancing their science education and student learning.

I mean, you're right. It's--it's--you know, I--I think Judge Cooper's decision was ludicrous because he thought that that little disclaimer that they pasted in the Georgia

PAGE 136

1 00136
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this statement--

Uh-huh (yes).

--that we just quoted is as to whether there is or is not purpose underlying life?

It's--it's the--it's to make them aware of the controversy regarding design explanations in biology, yes, that--that there is an alternative theory for understanding nature that--that involves design explanations, yes, and so is--you know, I want it to be much more substantial than it is to--to really serve the purposes of liberal education. But it--but it--it serves the minimal purpose of alerting them to a controversy that's--that's real and that's important.

And that's the contro--the controversy is--

Is--is over whether design explanations have a role in biology.

And by 'design explanations' here--

Uh-huh (yes).

--we're using it not in the sense of design of a particular bacterial flagellum but rather in the broader sense of 'Is there purpose to life?' Is that--

MR. GILLEN: Objection to form.

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1 00137
2 1 Q Isn't that what you mean?
3 2 A The--the two are related, but, I mean, intelligent-
4 3 design theory, insofar as it holds that there are
5 4 design explanations that are--are plausible, that
6 5 are reasonable explanations, is compatible with and
7 6 open to the possibility, then, that there is some
8 7 kind of larger design in nature. It's also open to
9 8 the possibility that there's a supernatural
10 9 explanation, but it doesn't require any of those
11 10 things.
12 11 But--but, yeah, I mean, I think that--
13 12 that the--that the controversy is over whether or
14 13 not--that--the underlying principle is that
15 14 when there's a controversy, students should be made
16 15 aware of different points of view.
17 16 Now, there's a controversy over
18 17 evolution. Some of the points of view are
19 18 religious. And I think they should be included
20 19 at--at some point in the--in the curriculum.
21 20 Where, is an important question, obviously.
22 21 But there are also--there is also a--a
23 22 scientific controversy, at least if we are willing
24 23 to have a somewhat broader definition of science
25 24 than establishment science holds. There's a

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1 00139
2 1 actions of atoms?
3 2 A Yeah. I mean, that's what--that's what makes the
4 3 controversy important to most people. And--and I
5 4 can't--I don't know what--I've not talked with and
6 5 I've not read what the school board said about it,
7 6 so I--you know, I can't speak to--to that.
8 7 But, for most people, undoubtedly, that's
9 8 why it's important. That's not the only reason or
10 9 maybe even--I mean, that's one--one reason why
11 10 students should be educated about the controversy.
12 11 But the other reason is because there is
13 12 a debate, a controversy, among scientists about
14 13 what counts as a good and an adequate scientific
15 14 explanation. And that controversy in and of itself
16 15 is important enough to warrant refu--reference to
17 16 intelligent design, I think, in--in the curriculum.
18 17 Now--now, many people, no doubt, would--
19 18 would say, "I could care less about this--this
20 19 debate among scientists and--and who gets to count
21 20 as scientists and who doesn't. I believe what
22 21 Genesis tells me." I--I mean, of course. And
23 22 that's why this debate is so important to many
24 23 people.
25 24 But that's not the only reason it's

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1 00138
2 1 controversy about that, what it means to be
3 2 scientific. And students should inform--be
4 3 informed about that.
5 4 And--and then the controversy is, do
6 5 design ex--are design explanations legitimate? I--
7 6 I think, since there is a respectable case that can
8 7 be made for that, that students need to be made
9 8 aware of it. "Respectable" meaning, as we talked
10 9 before, in terms of arguments and evidence cited by
11 10 people who have credentials in science and who use
12 11 other aspects of science as--as--in the process of
13 12 being scientists, who--who don't flatly reject
14 13 everything that science has to say, and that aren't
15 14 incompetent and un--uneducated in establishment
16 15 science.
17 16 Q Let me see if you can agree with this--
18 17 A Okay.
19 18 Q --statement: Throughout your opinion, you have
20 19 referred to significant disagreement and important
21 20 controversies. Isn't it true that what makes the
22 21 controversy important is the implications as to
23 22 whether there is a meaning to life--
24 23 Uh-huh (yes).
25 24 Q --other than sheer random, unguided, purposeless

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1 00140
2 1 important. And--and the warrant of references to
3 2 intelligent design, and ideally some discussion of
4 3 it, stem from the fact that there is--there is a
5 4 serious intellectual controversy among scholars,
6 5 credible scientists, and philosophers who--some of
7 6 whom are secular, not--not religious, about the
8 7 nature of design in--the nature of design in
9 8 nature, the--whether--whether there's design in
10 9 nature. And, as I said, not just in biology but
11 10 also in cosmology, and also in how we understand
12 11 the brain and the mind, and in other areas of
13 12 science.
14 13 So it's not just this case, even though
15 14 that's the one people pick up on 'cause that's--
16 15 that's the one that is personally--it's a part of
17 16 our culture wars.
18 17 Q Do you believe ninth-grade biology students should
19 18 be taught that and the species as we know them
20 19 today did not gradually evolve from other life
21 20 forms but appeared suddenly in the historical
22 21 record?
23 22 A Yes, I think they should be taught that that is
24 23 the answer to it. That that would be, in
25 24 fact, an endorsement of a religious worldview, and

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and would also be--
controversial position held by
of scholars

So, no, they shouldn't be taught that that's true. But as I said earlier, it seems to me that an introductory biology text, whether in undergraduate school or in high school, should locate biology within historical and philosophical controversies, so that if students are to be liberally educated, they appreciate the tensions, the conflicts, the overlaps between various ways of making sense of nature.

So, yes, I think a Biblical text--I mean--Biblical--a biological text--which is a Biblical text to some people--a biological text might well say something about creationism and Genesis--not much, but a little--talk about the differences between that and intelligent-design theory, talk about other ways, maybe Lamarckian evolution--

Would it be okay--
--so--
--for a text, and teachers teaching in accordance with the text, to explain to students that, you

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That is to say that when we locate students in con--in--when we locate contemporary science or contemporary economics or whatever in the larger cultural conversation, students shouldn't just be presented with alternatives like our cafeteria line, again. They should be given some sense of what the--what the majority positions are, what the minority positions are, and for whom.

So, yes, I think sci--I think students should be taught in biology classes that the majority--the vast majority of scientists hold to a neo-Darwinian view, but that not all of them do.

And I would, you know, want to convey the idea that--that, of course, many scientists don't deal with biology and neo-Darwinism, but of those who do, the vast majority hold to neo-Darwinism; but it isn't the only view, and--and there are people who raise questions about it who have credentials as--as scientists, and so you need to learn something about it.

You don't give equal time to the two points of view. Of course, the dominant establishment view gets the most time and the most pages in the textbook. But the other point of view

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22 21 A
23 22 Q
24 23 A
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know, for a long time, Western man thought that God created the earth and everything in it just the way the Bible said--

Sure.

--and that notion has now been scientifically discredited by everything we've come to understand through study of the fossil record and the nature of life processes?

No. I--I think probably it would be const--legally wise to--to qualify that last judgment and say that most--many scientists--most scientists--

Ninety-nine-point-four--
--believe something--believe something otherwise--
Ninety-nine and forty-four--
--right--than simply say--
--one-hundredths percent?
--than simply say the Bible is wrong.

But it--it would be okay, in your view, to teach that ninety-nine and forty-four one-hundredths percent, or whatever the number is--

Yeah.

--think that that's--

I argue, in--in that book and elsewhere, for what I call the principle of cultural location and weight.

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has to be mentioned. It has to be acknowledged.
MR. WILCOX: Thank you very much.
MR. GILLEN: Thank you, Chub. Thanks,
Warren.

(WITNESS EXCUSED)

(WHEREUPON, THE DEPOSITION WAS CONCLUDED AT 12:38 P.M.)

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1 00037
2 1 A Yes, although part of what I've tried to do is
3 2 develop a theory of liberal education that is in
4 3 fact better than--than the prevailing views. And
5 4 it's not that I depart all that much from people
6 5 from whom I have in fact learned a lot. I have--
7 6 it's not that I--I have all that unique an
8 7 understanding.
9 8 But--but one of things that troubles me
10 9 is--does bear on the discussion here and on what
11 10 we've just been talking about. And that is, I
12 11 think the conventional understanding of liberal
13 12 education is that one should have a little science,
14 13 a little literature, a little history, a little
15 14 art, a little economics, and so that you study--you
16 15 take different subjects.
17 16 And my problem with that way of thinking
18 17 is that we don't teach students subjects; we teach
19 18 them disciplines. We teach them the establishment
20 19 way of thinking within economics--neoclassical
21 20 economic theory--the establishment way of thinking
22 21 in history, or in art, or in--or in science, and
23 22 that a part of what makes education liberal--and
24 23 then--and then what that ends up being is a kind of
25 24 separatist education, where you--it's--it's like

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1 00039
2 1 help students understand what--the role science has
3 2 in a liberal education requires establishing
4 3 connections with other disciplines and ways of
5 4 thinking.
6 5 So that science education should be more
7 6 liberal than it is. It should not just narrowly
8 7 focus students in on the establishment
9 8 understanding of science but should broaden them
10 9 philosophically--and, in fact, I would also add,
11 10 religiously--by locating science in various kinds
12 11 of cultural disputes.
13 12 Although here, with regard to this case,
14 13 I would be happy if they would simply give students
15 14 a broader understanding of the relationship of
16 15 establishment science to other--to dissenters on
17 16 the edges of--of science to get them to see that
18 17 there are various ways of being--being scientific,
19 18 that the idea of science itself is one that's--
20 19 that's controversial.
21 20 Q This may be touching on a new subject, but--
22 21 A Uh-huh (yes).
23 22 Q --I perceive of it as an extension of what--
24 23 Okay.
25 24 Q --you were just saying. There are two terms that

PAGE 38

1 00038
2 1 encountering different items on a cafeteria line.
3 2 I call it serial socialization. That is, you learn
4 3 what the establishment--
5 4 Q You don't mean C-E-R-E-A-L, right?
6 5 A Yeah, the cereal on the cafeteria line. Oh, that's
7 6 good. I like that. I'm going to use that, if I
8 7 may. Thank you.
9 8 And--and a part of--of the purpose of
10 9 liberal education is to draw connections between
11 10 the different disciplines, to point out the
12 11 conflicts, the tensions, the overlaps, the
13 12 compatibilities.
14 13 And that's what students don't learn to
15 14 do. They don't learn to understand what the
16 15 relationship of the disciplines is. And the very
17 16 intra--I mean, this is part of what philosophy
18 17 does, is it tries to get at the--the connections
19 18 and the relationships between disciplines so that
20 19 we can think outside of each box in turn and ask
21 20 larger questions about what is reasonable to
22 21 believe, all things considered.
23 22 And that's part of what science education
24 23 should do, it seems to me, that it doesn't do, is--
25 24 is not just train scientists, but to get--to--to

PAGE 40

1 00040
2 1 I've encountered in this case that I think bear
3 2 differentiation and definition.
4 3 A Uh-huh (yes).
5 4 Q Methodological naturalism and philosophical
6 5 naturalism.
7 6 A Uh-huh (yes).
8 7 Q And am I correct that--if I can call it "mainstream
9 8 science" or "traditional science"--
10 9 A Uh-huh (yes).
11 10 Q --insists on methodological naturalism?
12 11 A Yes. That's--yes.
13 12 Q And am I correct that some scientists and other
14 13 thinkers have developed a philosophical naturalism,
15 14 which is a religious or a philosophic worldview
16 15 rather than a methodologically scientific
17 16 worldview?
18 17 MR. GILLEN: Object to the form.
19 18 A Certainly, that distinction is oftentimes drawn.
20 19 Whether it holds up in practice is another
21 20 question.
22 21 Q "Philosophical naturalism" means what?
23 22 A It's the idea that all of reality can be understood
24 23 within naturalistic categories, so that in
25 24 principle, unlike methodological naturalism, it

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1 00041
 2 1 concludes that naturalism is--is adequate for
 3 2 explaining everything. A methodological naturalist
 4 3 would often--typically say that it--it may be
 5 4 that--that science can't explain everything but
 6 5 science should continue to be a method--to adhere
 7 6 to a methodological naturalism: Let's see how much
 8 7 we can explain that way, but maybe we can't explain
 9 8 everything in the end.
 10 9 That distinction certainly can be drawn.
 11 10 My problem, again, is that in practice the
 12 11 distinction collapsed, given the way we do
 13 12 education nowadays.
 14 13 Q Let me see if I can be more direct in trying--
 15 14 A Okay.
 16 15 Q --to go where I'm--
 17 16 A All right.
 18 17 Q --trying to go here. Methodological naturalists
 19 18 would say, "We insist on using our methodology to
 20 19 understand the natural world."
 21 20 A Uh-huh (yes).
 22 21 Q And philosophical naturalists would say, "The
 23 22 natural world is all there is;--"
 24 23 A Uh-huh (yes).
 25 24 Q --"there is nothing beyond that."

PAGE 43

1 00043
 2 1 matter.
 3 2 A Okay. If--given the religious answer, if--if
 4 3 "religion" means answering a question that has
 5 4 religious implications--like "Is there meaning?--"
 6 5 and if you say no, because you've given an answer
 7 6 to a religious kind of question, then philosophical
 8 7 naturalism, I suppose, could be called a kind of
 9 8 religion.
 10 9 I myself don't like to use "religion"
 11 10 in--in that way. For--for me, a religious view is
 12 11 a view that holds that there is some kind of
 13 12 purpose or meaning to existence beyond naturalism,
 14 13 so that naturalism simply--it--it doesn't make much
 15 14 sense to call that a religious view. But that--
 16 15 that's a view about--that's my effort to try and
 17 16 avoid using the word "religion" in an unduly
 18 17 controversial or complicated way.
 19 18 Q And forgive me, because my notes got in the way of
 20 19 my understanding. You said a religious view as you
 21 20 would view it requires that there is a meaning or
 22 21 purpose to life, did you say?
 23 22 A To reality.
 24 23 Q To reality?
 25 24 A To reality. That's right. There is a dimension to

PAGE 42

1 00042
 2 1 A Okay.
 3 2 Q So the philosophical naturalists would say, "There
 4 3 is no divine purpose in life"--
 5 4 A Uh-huh (yes).
 6 5 Q --"and, indeed, there is no divinity."
 7 6 A Uh-huh (yes).
 8 7 Q The philosophical naturalist would say, "There are
 9 8 no absolute moral values; there are socially
 10 9 useful"--
 11 10 A Okay.
 12 11 Q --"values." So the philosophical naturalists would
 13 12 take a religious approach--
 14 13 MR. GILLEN: Objection. I'm sorry.
 15 14 Q --in term--religion in the sense of providing
 16 15 ultimate meaning--and say that there is no ultimate
 17 16 meaning.
 18 17 MR. GILLEN: Objection--
 19 18 Q Fair enough?
 20 19 MR. GILLEN: Objection to the form. Go
 21 20 ahead. Answer.
 22 21 Q And that was so clumsy, I'll come back and do it
 23 22 again.
 24 23 MR. GILLEN: No. You know what, Chub,
 25 24 you and I both know it's a complicated subject

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1 00044
 2 1 reality or an aspect of reality that--that
 3 2 transcends what we can know naturalistically. And
 4 3 the different great world religions have defined
 5 4 that in very different senses. And in some
 6 5 religious traditions, you--you have God, and in
 7 6 others, you have nirvana, or Brahman, or the Tao,
 8 7 and something that doesn't look all that familiar
 9 8 to our idea of God within the Western tradition,
 10 9 but it's still an understanding of reality that
 11 10 transcends in some--in important ways what--what a
 12 11 naturalistic scientific worldview allows us to--to
 13 12 say about reality.
 14 13 And that's crucial to religion, to my way
 15 14 of thinking, so that naturalism doesn't become
 16 15 religious just because it gives negative answers to
 17 16 religious questions.
 18 17 Q Okay.
 19 18 A I'm--I'm not sure that much hangs on that, in the--
 20 19 in the end, even constitutionally, but--but I think
 21 20 that's the clearest use of--of the term "religion."
 22 21 Q And to wrap up this segment--
 23 22 A Okay.
 24 23 Q --is it your view that that religious--strike that.
 25 24 Is it your view that that appreciation

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for the reality of a transcendent purpose to reality needs to be brought into both science and science education in public schools?

MR. GILLEN: Object to the form.

Let me give you a qualified yes, because a straightforward yes would invariably be misunderstood. So--and again, my understanding--the--the conception of science education that I argue for is locating science, in part, historically and philosophically in relationship to other subjects, other areas of our cultural life. So that a good science education should help students understand the relationship of science to moral issues, political issues, religious concerns.

That doesn't mean that religious views should be understood to be--should be understood to provide some kind of legitimate alternatives to science, that they can become--that--that they--for example, that--that Genesis should be taught in a science class--class as a contender with establishment science, no.

Science classes should teach science. I think they should include some discussion of IDT because IDT should be considered science. At the--

PAGE 47

1 00047
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And it's the next-to-the-last paragraph. And you say, quote, "We disagree deeply in our culture about how to make sense of nature," and then the sentence continues.

(Examines paperwritings.) Uh-huh (yes).

And I want to go into each of the parts of it. Okay.

In talking about this disagreement in our culture about how to make sense of nature, are you talking about this question whether there is or is not a transcendent purpose in reality?

MR. GILLEN: Objection to the form.

Yes. But again, the--the controversy occurs on, I think, two different levels. One is the level of our culture wars, where the--the issue is oftentimes framed in terms of creationism versus evolution. And--and as I said, I--I think we need to recognize that there are alternative positions there, that the usual culture-wars rhetoric doesn't work very well.

And then there's also disagreement among--more narrowly among scholars--and, in fact, I think, among scientists--about how to make sense of nature, so--where IDT is--is one of the major

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23 22 Q
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25 24 A

at--at the least, students should be made aware of the controversy over whether IDT is science. But any science class should also locate students within the larger cultural conversation we're having about important things.

So, to that extent, religious, moral, and political views that science impinges on, has implications for, need to be part of the framework for locating students.

MR. WILCOX: Okay. Why don't we take a little break.

MR. GILLEN: Sure.

MR. WILCOX: We've been going for an hour.

MR. GILLEN: Certainly.

(ELEVEN-MINUTE RECESS)

(By Mr. Wilcox) If you will turn to the second page of your opinion--

(Examines paperwritings.) Uh-huh (yes).

--there's a paragraph under the heading "Critical Thinking."

Yes.

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issues.

But that--it's not--that's not the only source of that kind of conflict. It comes up with regard to fine-tuning in cosmological evolution. It comes up with regard to the origins of life. It comes up with the nature of mind and morality. There are--there are conflicts there among scholars, among philosophers and scientists and sometimes theologians, that the public is simply unaware of. So--so, you know, we've got to do a kind of two-layer analysis, I think.

Okay. You continue in the sentence, "we disagree about evolution."

Uh-huh (yes).

Is this the disagreement as to whether evolution has purpose or not, or is this the disagreement as to whether evolution explains the origin of species or not?

MR. GILLEN: Object to the form.

Well, again, there are several different disagreements. As I said, there's--there's the culture-wars disagreement, where it's evolution versus creationism oftentimes. There's a more sophisticated analysis which--which says it's not

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1 00057
 2 1 the--in the discipline to other ways of making
 3 2 sense of the world and of the--the particular
 4 3 subject at hand.
 5 4 Neoclassical theory is sort of like the
 6 5 methodological naturalism of--of the sciences.
 7 6 There's a--there's a real comparison there. I
 8 7 think most people would find--and certainly when
 9 8 I've talked with groups of people and we talk
 10 9 through this--that the kind of commitment to
 11 10 neoclassical economic theory in economics is--most
 12 11 people find appalling, other than professional
 13 12 economists. And of course, people are something
 14 13 more than that. Of course, justice questions
 15 14 should be involved in--in economics.
 16 15 So, that kind of--that's part of my work,
 17 16 too, that the kind of battles that we're looking
 18 17 at--the kind of questions we're looking at in
 19 18 science also occur in other disciplines.
 20 19 (DISCUSSION OFF RECORD)
 21 20 Q On Page 4, you have a paragraph that begins, "It is
 22 21 true that we can distinguish, in principle, between
 23 22 a methodological naturalism"--
 24 23 A (Examines paperwritings.) Uh-huh (yes).
 25 24 Q --"and a philosophical naturalism." Would you

PAGE 59

1 00059
 2 1 A Uh-huh (yes).
 3 2 Q --and imply, from philosophical naturalism, a
 4 3 negation of any reality beyond the natural world.
 5 4 A Uh-huh (yes).
 6 5 Q Do you agree with that?
 7 6 A Yes, I think so.
 8 7 Q Okay. Then you go on and say, "The educational
 9 8 problem is that unless students are made clear
 10 9 about this distinction, they will inevitably
 11 10 conclude that science does tell us everything that
 12 11 there is to be said about nature, and God plays no
 13 12 role in nature." What is your basis for that
 14 13 statement?
 15 14 A (Examines paperwritings.) I wouldn't write that,
 16 15 first of all, the same way, if I were going to do
 17 16 that again, because that simplifies what--what
 18 17 my--my argument is. And the problem is this: We
 19 18 can draw that distinction, methodological and
 20 19 philosophical naturalism, in principle, easily
 21 20 enough. And that's fairly straightforward. I
 22 21 don't think--
 23 22 Q And we can explain it to students, too.
 24 23 A We can--we can explain it to students. The problem
 25 24 is that it's a--we don't explain--we don't explain

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1 00058
 2 1 agree that the methodological naturalism that you
 3 2 refer to there is what we have been referring to as
 4 3 classical science or traditional science?
 5 4 MR. GILLEN: Object to the form.
 6 5 A The "traditional" and the "classical" seem to me to
 7 6 be not the right words to use, because classical
 8 7 and traditional science did involve design--have
 9 8 design explanations.
 10 9 Q My--
 11 10 A It's peculiarly modern science--
 12 11 Q Modern science.
 13 12 A --that wants to dispense with--
 14 13 Q Okay.
 15 14 A --naturalistic--or design explanations.
 16 15 Q So "methodological naturalism" would be another way
 17 16 of referring to modern science?
 18 17 A Yeah.
 19 18 Q And--
 20 19 A The dominant view, yes.
 21 20 Q And the philosophical naturalism, you say, denies
 22 21 that there is any design or supernatural causes in
 23 22 the world.
 24 23 A In reality.
 25 24 Q But I would take it further--

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1 00060
 2 1 it to students in a--in a compelling--in a
 3 2 compelling way. And to do it in a compelling way
 4 3 to get them to see the point of it is, I think,
 5 4 difficult to do.
 6 5 And granted, you--you can--you can make
 7 6 the distinction in--in two sentences. Okay. But
 8 7 then we go and teach them for a semester or an
 9 8 academic year, using science understood in terms of
 10 9 methodological naturalism, and that two-sentence
 11 10 explanation of the distinction gets lost because--
 12 11 because of the over--overriding power of--of what
 13 12 they learn afterwards through their whole study of
 14 13 science.
 15 14 Now, that's not to say that it isn't
 16 15 important to draw that distinction. It is
 17 16 important to draw that distinction. It's just that
 18 17 that doesn't really go very far. It doesn't go
 19 18 nearly far enough to really get students to grapple
 20 19 with the--with the kind of philosophical issues
 21 20 that--that underlie the distinction, which is--is
 22 21 part of what a liberal education should do, and--
 23 22 and to show how drawing that distinction relates to
 24 23 these larger questions about our cultural
 25 24 disagreements over the extent to which science can

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SHEET 16 PAGE 61

1 00061
 2 1
 3 2 Q explain reality.
 4 3 You say unless students are made clear, quote,
 5 4 "they will inevitably conclude that science does
 6 5 tell us everything that there is to be said about
 7 6 A nature, and God plays no role in nature."
 8 7 Q Yeah. Well--
 9 8 Why do you say they will inevitably conclude that?
 10 9 A What is your basis?
 11 10 I--I should have said they will naturally conclude
 12 11 that, because I--I suppose it isn't inevitable that
 13 12 they will conclude it. But that will be the--the
 14 13 natural conclusion: Well, science doesn't tell us
 15 14 anything about--and--and when I said that I
 16 15 wouldn't have written it the second way, I--I
 17 16 wouldn't have--I wouldn't have written it the same
 18 17 way if I were doing it now, because I--I see a
 19 18 complication that obviously didn't occur to me when
 20 19 I wrote it. And that is, it's not just that God
 21 20 plays no role in nature, but the design plays no
 22 21 role in nature. And I--and I want to be very
 23 22 careful to distinguish those two questions.
 24 23 And students learn--we require them to
 25 24 take, if they're going to university, four years of
 science in high school--

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1 00063
 2 1 Q --in that last answer to necessarily be a reference
 3 2 to what we've been talking about as intelligent-
 4 3 design theory.
 5 4 A Uh-huh (yes).
 6 5 Q Did you understand it to refer to intelligent-
 7 6 design theory, or, more broadly, to the question of
 8 7 a transcendent god providing a purpose in life--
 9 8 MR. GILLEN: Objection to form.
 10 9 Q --or--or in reality?
 11 10 A I'm not sure that I understand the question.
 12 11 Q Okay. We've been talking design, I think, in two
 13 12 different senses.
 14 13 A Uh-huh (yes).
 15 14 Q One is the narrow, inferential, explanatory--
 16 15 A Uh-huh (yes).
 17 16 Q --sense of intelligent-design theory--
 18 17 A Right.
 19 18 Q --and the other is--and perhaps we haven't been
 20 19 talking about it; it's only me thinking fuzzily
 21 20 about it--design in the sense of a purpose--
 22 21 A Uh-huh (yes).
 23 22 Q --of reality--
 24 23 A Uh-huh (yes).
 25 24 Q --that purpose being informed by a transcendent

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1 00062
 2 1 Q Can--I want to focus on high school here.
 3 2 A Yeah. Four years of--of high--
 4 3 Q Okay.
 5 4 A --high-school science, and four years of science
 6 5 shaped by methodological naturalism. And it--it
 7 6 conveys to them, unless a good deal of time and
 8 7 effort is spent, the idea that science can actually
 9 8 tell us everything that's to be said about nature.
 10 9 And--and that's controversial. And that
 11 10 inevitably--naturally, at least--slides over into a
 12 11 kind of philosophical naturalism. The only way to
 13 12 avoid that is to give them some kind of substantive
 14 13 examples of--and which a liberal education
 15 14 requires--of how science might have limitations
 16 15 and--and how design might figure into our
 17 16 understanding of nature, or even how nature, as
 18 17 understood by modern science, might relate to God.
 19 18 MR. WILCOX: May I have that repeated,
 20 19 just the last twenty words?
 21 20 (Whereupon, the sentence at Lines 11 through 17
 22 21 on this page was read back.)
 23 22 Q (By Mr. Wilcox) I did not understand your
 24 23 reference to design--
 25 24 A Uh-huh (yes).

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1 00064
 2 1 god.
 3 2 MR. GILLEN: Object to form.
 4 3 Q Is that consistent with your understanding?
 5 4 A So, there are three possibilities here. One is the
 6 5 narrowest sense that--where a scientist might
 7 6 suggest a design explanation with regard to some
 8 7 fairly discrete phenomenon--how cells work, for
 9 8 example.
 10 9 And then secondly, there's a larger
 11 10 question about whether that provides some kind of
 12 11 evidence for claims that there is a purpose in
 13 12 nature that--that--or a design in nature.
 14 13 And then there's a third level, which is,
 15 14 how do we explain that design in nature? Do we
 16 15 appeal to a supernatural god--to a god or a
 17 16 supernatural being who causes it?
 18 17 My argu--my position is that--of course,
 19 18 that you can make design explanations, and you can
 20 19 hold the position that there's design in nature
 21 20 apart from any commitment, theological commitment,
 22 21 to a god or to a supernatural being, that those are
 23 22 distinguishable--conceptually distinguishable kinds
 24 23 of--of questions. All the time, in--in our
 25 24 ordinary everyday relationships, and indeed in the

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practice of science, we talk about things being designed with--without presupposing that--that we have to use religious language or theological language in doing that.

So, certainly, we can talk of the idea of design as conceptually independent of the--of the idea of God. But, of course, when we talk about the design inherent in cells or in fine-tuning after the Big Bang, of course, the big question is, how does that design get to be there? But it's still a conceptually discrete question. You don't have to have a religious--you--you can--you can still have evidence for and make a good argument for design without having any kind of theological or religious commitments, it seems to me.

So I--I want to be careful to distinguish design questions from religious questions. And--and that's what allows me to say that design questions should be allowed in a somewhat enlarged science. That doesn't run us the risk of making science into a quasi-religious endeavor or a theological endeavor.

Can you identify for us one intelligent-design theorist who claims that the source of the design

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But there certainly are a variety of philosophical positions and very liberal religious positions which hold that there's design in the world but that it's not there because of a supernatural god, the kind of god that's part of orthodox religious traditions: Aristotelian views; process-theology, process-philosophy views; some feminist views of nature.

So--so--and again I want to draw that sharp distinction between design on the one hand and supernaturalistic religion on the other. Design is supernaturalistic in sense "B." Design isn't allowed, given the constraints of methodological or philosophical naturalism, but you can still have design without committing yourself to supernaturalism "A," which is a designer--an independent supernatural god. Next question. Do you know of any intelligent-design theorists who are not also practicing Christians? I don't know the religious backgrounds of many of them. I know Behe's a Catholic. I don't know if he's a good Catholic or a bad Catholic. That's his tradition. And I know that Phillip Johnson has made various kinds of remarks that suggest he's

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was some extraterrestrial alien?

Now, I know that Francis Crick argued that maybe life arose here as a result of intelligent beings elsewhere in the universe sort of implanting it. But he, of course, wasn't an intelligent-design theorist.

I guess I just don't--I don't see the point. No, I mean, intelli--but intelligent-design theorists claim that in the--claim that they can do--that they can make design arguments apart from theological convictions or--or commitments. And that makes perfectly good sense to me.

Undoubtedly, some, maybe many, maybe most of all them, do have religious convictions. But still, you can distinguish the--the design argument, the evidence for the design argument, from the theological position which they may or they may not hold. So that intelligent design as science doesn't imply or require any kind of religious worldview or conviction. It--it may well be that the only way--or that the best way--maybe I should say "the best way." It may well be that the best way of explaining the design is in terms of a supernatural god.

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religious in some deep sense. But, I mean, that's all--about all I know about their private religious views.

You pose the question, in your report, at the top of Page 5, "Is IDT science?"

Uh-huh (yes).

And you suggest, quote, "Arguably, what should be taken seriously as science is in part, at least, a matter of what good scientists take seriously." That strikes me as fairly circular. How do you identify what is a good scientist if you don't have a notion of what science is?

Well, it--it moves the focus from science in the abstract to what particular individuals do. So, first of all, it's important to point out the "is in part," because it's in part a matter of something else, which is philosophical considerations.

But one way of--of deciding what good science is is to look at what scientists do, and that shifts the focus: Okay, then, what makes for a good scientist? And--and the answer there is, given our ordinary understanding of science, it's somebody who's gotten a Ph.D. from a research

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1 00073
2 1 into culture-wars debates. It does that in part.
3 2 But it also--and more importantly, more
4 3 relevantly--ties into, I think, important
5 4 discussions on the edges of science about how to
6 5 define science, and to a tremendously important
7 6 question of whether there's design in nature and in
8 7 the world.
9 8 Now, that's a perennial philosophical
10 9 question. It's not just a religious question.
11 10 Philosophers have debated that quite apart from
12 11 anything that looks like traditional organized
13 12 religion. And--and so it's--I mean, certainly, the
14 13 design question can be understood as a secular
15 14 philosophical question, but insofar as it's a
16 15 question to which collecting evidence and
17 16 performing experiments is--is relevant, it can also
18 17 be a scientific question, I think.
19 18 Q Okay. Let me continue, because we get to some of
20 19 this.
21 20 A Okay.
22 21 Q You ask--with reference to how many scientists take
23 22 IDT seriously--
24 23 A Uh-huh (yes).
25 24 Q --What is (or has been) their standing within

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1 00075
2 1 How familiar are they with establishment
3 2 science? What kinds of credentials do they have
4 3 because of their--their educations and things that
5 4 they might have published apart from--from IDT?
6 5 And it's a more-or-less kind of question. That's
7 6 relevant to--to judging--and--and again, how much
8 7 of establishment science do they have to reject?
9 8 If you're a creation--an old-fashioned
10 9 creation scientist and have to give up carbon-14
11 10 dating, and the age of the earth, and dinosaurs,
12 11 and all kinds of other things like that, you know,
13 12 that's an argument for saying that just can't be
14 13 considered science. But I take it that most of the
15 14 IDT people don't do that, that they accept an awful
16 15 lot of science.
17 16 Q Do they accept that man evolved from lower life
18 17 forms?
19 18 MR. GILLEN: Object to the form.
20 19 A I don't know. I suppose I have to say I don't know
21 20 the answer to that. I know in--in at least a few
22 21 cases--I mean, Behe, I know, accepts evolution;
23 22 he's an evolutionist. And as a matter of fact, he
24 23 said--in a New York Times piece this spring, he
25 24 says most IDT theorists are evolutionists; it's

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1 00074
2 1 establishment science?"
3 2 A Yeah.
4 3 Q Other than Michael Behe, can you identify for us
5 4 one intelligent-design theorist who has a standing
6 5 within establishment science? I'm not talking
7 6 about mathematics; I'm talking science.
8 7 A I--I guess, if the question is "Are there people
9 8 who established a relationship and published in
10 9 science before they became intelligent-design
11 10 theorists?" I--I don't know. You know, about the
12 11 best that I can do in response to that question is
13 12 to say I'm not a scientist, and I do observe this
14 13 debate more through the kind of general literature
15 14 than through my reading of scientific journals or
16 15 the science--the science itself.
17 16 Q You continue: "What kinds of research have they
18 17 done?" I--I assume here you're talking about IDT
19 18 scientists and what kinds of IDT research have they
20 19 done?
21 20 A No, not necessarily. Have they done--but here,
22 21 it's important--again, I mean, anybody who gets a
23 22 Ph.D. from a research university is going to
24 23 have--have done research in establishment science,
25 24 and so that's crucial.

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1 00076
2 1 just that they think the design has to enter into
3 2 the question of evolution. So, in some sense, yes,
4 3 we descend from other life forms. It's just that
5 4 you can't explain that evolutionary process in
6 5 neo-Darwinian terms--or you can't explain it fully
7 6 in neo-Darwinian terms.
8 7 Q Do IDT theorists tend to believe that the great
9 8 majority of species were--suddenly appeared--
10 9 MR. GILLEN: Objection to form. Spec--
11 10 sorry.
12 11 Q --with no record in the fossil record?
13 12 A I--
14 13 MR. GILLEN: Objection to form.
15 14 Speculation.
16 15 A I--I don't know.
17 16 Q Do you remember reading that in Pandas and People?
18 17 A No.
19 18 Q You pose the question "To what extent does the
20 19 theory draw on accepted science?" "Draw on" is a
21 20 little vague. Is it your view that intelligent
22 21 design draws on methodological naturalism?
23 22 A It certainly draws on--I mean, it certainly draws
24 23 on--on other aspects of science. And insofar as--
25 24 as pretty much all science is defined by

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methodological naturalism, it certainly draws on the conclusions of that science to--as--as part of its case.

I mean, again, to think of Behe, he doesn't--you know, this doesn't come all out of the blue, his theory. He's--he locates his design arguments in the context of very deeply textured understandings of the cell, which is drawn from--from establishment science. So it's--it's not, again, like the old-fashioned creation scientists, who dismiss so much of establishment science and--and make arguments that are unrelated to traditional or--or modern establishment science. It--again, it just seems to me to be quite a different kind of--of thing.

Let's try to get at this another way, perhaps. Do you understand intelligent-design theory to be a testable and tested hypothesis?

Yes, although the tests certainly would be somewhat different from those employed in methodolo--within a methodological naturalism. They may be statistical tests, like Dembski--Dembski offers, or, you know, the notion of irreducible complexity that Behe uses. I mean, that's certainly--that's--

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Do you know the context in which it appeared? Was it a paid ad, or an Op-Ed submission--

Oh, I--

--or a--

No, it was--it was a paid ad. Sure.

Okay. And do you know who paid for the ad?

No. I could guess, but, no, I don't know. I don't--I don't remember.

The Discovery Institute?

I--that would be my guess, but I--

Okay.

--don't know.

MR. WILCOX: Off the record.
(DISCUSSION OFF RECORD)

MR. WILCOX: Okay. Back on.

(By Mr. Wilcox) You continue in your list of aids or tests: "To what extent is it an ad hoc theory?"

Uh-huh (yes).

You'd better explain what you mean by that for me. (Examines paperwritings.) Well, the next sentence explains it. That is, "Does it grow honestly out of the evidence rather than out of prior ideological or religious commitments?" An explanation that--that really doesn't grow out of

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it's a way of testing an idea, but it's not the standard way of--of methodological naturalism.

The--the arguments for fine-tuning in--in cosmology, again, rely on very sophisticated kinds of mathematical and statistical analyses to suggest that the nature of our universe--the idea that it is by accident the kind of universe that produces life is--are extremely improbable. Well, I mean, that's a way of testing, I think, a design claim, but it's not the way of testing that's found, I think, in much science. Although here I'm really going beyond what I can talk about, because I know various kinds of scientists use various kinds of statistical analyses to--to support causal claims, for example. So I--you know, I probably should acknowledge my limitations, though I--

Okay. You referred earlier to seeing a list of two or three hundred names--

Yes.

--in, did you say, The New Republic?

I know The New Republic, and--and I--my impression is that that list appeared in a couple of other places, maybe The New York Times. I--I saw it in The New Republic.

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23 22 Q
24 23 A
25 24 Q

evidence but grows out of convictions that someone already has would be an ad hoc theory.

Okay. So those are two connected--

Yes, that's right.

--questions?

I should have said, "That is, does it grow out," but--and--and let me--I--is your question does design--is design theory ad hoc? No.

I'm going to go to the next--

All right. I'll wait for your question.

--question. To answer whether it grows honestly out of evidence imports a notion of trustworthiness--

Yeah.

--that I'm not sure I can address. Do you feel that you have insights as to the honesty vel non of the IDT theorists?

I don't have any deep insight into--

Okay.

--into their honesty, or into the honesty, I should say, of--of--

Neo-Darwinists?

--some neo-Darwinists. That's right.

Okay.

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1 00081
2 1 A 'Cause you can make the same kinds of arguments
3 2 in--in either case. I mean, people say that--
4 3 that--a lot of people say that design theorists--
5 4 theory really grows out of religious convictions,
6 5 and some people say that neo-Darwinism really grows
7 6 out of atheistic convictions.
8 7 Darwin--Darwin himself couldn't believe
9 8 in a personal god after the death of his ten-year-
10 9 old daughter. You know, does that have something
11 10 to do with the fact that he now can ex--that--that
12 11 he wants to come up with an explanation of the
13 12 world independent of a--of a theistic god? I don't
14 13 know. My suspicion is that probably Darwin's
15 14 theory did grow out of a--not out of his re--his
16 15 personal rejection of a religious god. But
17 16 certainly there are some neo-Darwinians who
18 17 probably hold their views at least in part because
19 18 they can't tolerate the idea of a god.
20 19 So how do you assess the honesty? I
21 20 don't know. Certainly, many neo-Darwinians, I
22 21 think, come to their views because that's their
23 22 best reading of the evidence, rather than out of
24 23 any kind of prior religious convictions. And I--
25 24 and I suspect that at least some IDT theorists,

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1 00083
2 1 that question isn't opened up for discussion,
3 2 then--then you get what I call scientific
4 3 fundamentalism, whereby students are expected to
5 4 accept methodological naturalism more or less as a
6 5 matter of faith, or, that is to say, of trust in
7 6 the scientific establishment, rather than any kind
8 7 of reasoned conviction about it.
9 8 The only way to--to have a re--a reasoned
10 9 position on methodological naturalism is if you
11 10 understand something of the alternatives or the--
12 11 the debate about the adequacy of methodological
13 12 natural--methodological naturalism going on in our
14 13 larger intellectual life.
15 14 Q To some extent, intelligent-design theorists
16 15 reference things like Mount Rushmore.
17 16 A Yeah.
18 17 Q You're familiar with that--
19 18 A Yeah.
20 19 Q --sort of "I know it when I see it"?
21 20 A Uh-huh (yes).
22 21 Q That, of course, presupposes that the intelligence
23 22 underlying the design is an intelligence much like
24 23 human intelligence, doesn't it?
25 24 A Yeah. Well, I mean, that analogy does, yes. Or by

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1 00082
2 1 maybe most of them, also come to their convictions
3 2 out of an independent assessment of the evidence.
4 3 Maybe they're open to design explanations because
5 4 of religious convictions that they have, but--but
6 5 that's a different question from whether those
7 6 religious convictions actually drive or shape their
8 7 conclusions as scientists.
9 8 Q Okay. You continue that "whether or not IDT is
10 9 good science is in part, at least, a philosophical
11 10 question."
12 11 A Yeah.
13 12 Q And you then state, "Modern science has prided
14 13 itself on its openness to new evidence and to the
15 14 potential falsification of its theories." Would
16 15 you agree that modern science, however, is not open
17 16 to different methodologies; it insists on--
18 17 A Yes.
19 18 Q --methodological naturalism?
20 19 A Yes. And that then becomes the kind of
21 20 philosophical question that it's important for
22 21 science--scientists themselves and students who
23 22 study science to be educated about: Is
24 23 methodological naturalism--should methodological
25 24 naturalism define modern science? Because if--if

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1 00084
2 1 analogy, yes.
3 2 Q Which connotes that man is created in the image of
4 3 God, does it not?
5 4 A Well--
6 5 MR. GILLEN: Object to form.
7 6 A --no, because, again, I want to distinguish between
8 7 supernaturalism "A" and supernaturalism "B" simply
9 8 because there are some folks in the history of
10 9 thought who are supernaturalists "A," and there are
11 10 some folks who are supernaturalists "B," and--and
12 11 intelligent design is compatible with either.
13 12 It doesn't require God understood in
14 13 traditional terms of Judaism, Christianity, and
15 14 Islam. It could be simply the presence of design
16 15 in the universe in ways in which other philosophers
17 16 have understood as--as a possibility but that
18 17 doesn't rely on--on the idea of God. So--and
19 18 that's a crucial distinction. I--I don't want to
20 19 lang--we don't--we don't necessarily have to have
21 20 God just because we have design.
22 21 Q I'd like to switch gears and talk about the
23 22 educational value--
24 23 A I'm happy to switch gears.
25 24 Q --of the Dover Area School District--

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SHEET 22 PAGE 85

1 00085
 2 1 A Okay.
 3 2 Q --update of the biology curriculum. The biology
 4 3 curriculum was updated to include a preliminary
 5 4 statement as follows, quote: "Students will be
 6 5 made aware of gaps, slash, problems in Darwin's
 7 6 Theory and of other theories of evolution,
 8 7 including, but not limited to, Intelligent Design."
 9 8 What are the--do you have any understanding as to
 10 9 what is meant by the "gaps, slash, problems in
 11 10 Darwin's Theory"?
 12 11 A (Examines paperwritings.) I don't know what--since
 13 12 I haven't read any literature or talked with any of
 14 13 the people--what the authors of that statement
 15 14 mean. I--I can speculate as to what it might be or
 16 15 what I would take them to be, the--the
 17 16 gaps/problems.
 18 17 Q Would it, in your mind, be a reference to gaps in
 19 18 the fossil record, for example?
 20 19 A It could be. That's certainly one of the--the
 21 20 kinds of gaps that oftentimes are mentioned,
 22 21 particularly in--in intelligent-design literature.
 23 22 Q And could it be also the difficulty that evolution
 24 23 has in explaining the crossover from chemistry to
 25 24 life?

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1 00087
 2 1 know what in particular the authors meant.
 3 2 Q Well, let me just test--see if I understand--strike
 4 3 that.
 5 4 I'd like to ask you if you have an
 6 5 understanding as to the structure of this sentence.
 7 6 One way to read it is that students will be made
 8 7 aware of gaps/problems in Darwin's theory and that
 9 8 they will be made aware of gaps/problems in other
 10 9 theories of evolution.
 11 10 A Yes.
 12 11 Q Do you read it that way?
 13 12 MR. GILLEN: Objection. Form.
 14 13 Speculation.
 15 14 A (Examines paperwritings.) I'm puzzled as to that
 16 15 sentence, too. I--that seems to be--do you want to
 17 16 suggest another reading to it?
 18 17 Q Another reading might be "Students will be made
 19 18 aware of gaps/problems in Darwin's theory, and
 20 19 they"--
 21 20 A And then made aware of other theories.
 22 21 Q --"and then they will also be made aware of other
 23 22 theories of evolution, including intelligent
 24 23 design."
 25 24 A Well, I suspect that's what it means because--

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1 00086
 2 1 A That would certainly be one of the possibilities,
 3 2 yes.
 4 3 Q Can you think of any other gaps, slash, problems in
 5 4 Darwin's theory?
 6 5 A Well, I think another big one would be the
 7 6 development of--of sexual reproduction. My
 8 7 understanding is that--this is nothing I'm an
 9 8 expert on, but my understanding is that that does
 10 9 create a large problem, how you get sexual
 11 10 reproduction where only the--half the genes of--of
 12 11 each parent become transmitted to the offspring,
 13 12 that that's not what neo-Darwinism would--would
 14 13 lead one to think should happen. So how do you--
 15 14 how do you get bisexual reproduction? That might
 16 15 be one. I don't--I don't know.
 17 16 I mean, certainly, there are particular
 18 17 kinds of cases, the things that Behe talks about,
 19 18 in--in cellular biology and biology. There's--
 20 19 there's the kind of problem that Gould tried to
 21 20 address with punctuated equilibria, the rapid
 22 21 transitions in evolution. I suspect that's
 23 22 probably one. And then the absence of--of fossil--
 24 23 intermediate fossils in those kinds of cases. I
 25 24 suspect those are the kinds of things, but I don't

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1 00088
 2 1 Q The latter?
 3 2 A Right, probably, but--but I don't know.
 4 3 Q Okay.
 5 4 A I don't know.
 6 5 Q In your view, is intelligent design another theory
 7 6 of evolution?
 8 7 MR. GILLEN: Objection. Form.
 9 8 Speculation.
 10 9 A Well, I mean, I--my impression is that at least
 11 10 some, Behe says most, intelligent-design theorists
 12 11 accept evolution. The question is the mechanism of
 13 12 evolution. I don't know whether that's the case.
 14 13 I--I just don't know whether most intelligent-
 15 14 design theorists accept evolution in--in some form.
 16 15 Well, I don't know.
 17 16 Q Okay. So, if the school board had in mind that
 18 17 intelligent design was an alternative theory of
 19 18 evolution to Darwinian theory--
 20 19 A Uh-huh (yes).
 21 20 Q --you would say that that's not consistent with
 22 21 your understanding of intelligent design?
 23 22 A I'm sorry. Say that again? If--
 24 23 If the school board--
 25 24 A Uh-huh (yes).

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1 00097
2 1 A I--I think that neo-design--pretty soon, we'll have
3 2 neo-design theory.
4 3 Q We already do.
5 4 A Intelligent design theory is in its infancy, and
6 5 and, you know, maybe--you know, it may be it won't
7 6 be long-lived. I--I don't know. But I don't think
8 7 there's anything like a full-fledged, at this
9 8 point, intelligent design theory that--what I
10 9 mean, Behe does is show that at the cellular level
11 10 there are various kinds of--of problems.
12 11 There are others--there are other gaps in
13 12 the evolutionary account that we talked about
14 13 earlier, for which design explanations--for--for
15 14 which we might find or appeal to design
16 15 explanations, but--but I don't think there's
17 16 anything like a full-fledged intelligent design
18 17 theory yet.
19 18 But still, what intelligent design
20 19 theorists have come up with is very suggestive
21 20 and--and, I think, significant, in part because of
22 21 its implications, and particularly for its--the
23 22 questions it raises about the nature of science and
24 23 whether science needs to be defined more broadly.
25 24 Q Can we agree that, as you understand it,

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1 00099
2 1 fine-tuning arguments that have received a lot of
3 2 discussion among cosmologists and philosophers.
4 3 Q Just--
5 4 A At one end--
6 5 Q Just so we are--are communicating, "cosmology"
7 6 meaning how the universe got to--
8 7 A Yes.
9 8 --be the way it is?
10 9 A Yeah. In the--in the wake of the Big Bang, the
11 10 very extraordinary set of coincidences that
12 11 allowed--that made this universe a universe that in
13 12 the end produces life. The--the extent to which
14 13 cosmologists and defenders of the naturalistic
15 14 worldview have to go to to re--to discredit that
16 15 idea usually requires the appeal to an infinite
17 16 number of universes, which is an extraordinary move
18 17 to make.
19 18 So--so, you--you get a kind of plausible
20 19 design argument out of fine--cosmological
21 20 fine-tuning. And on this end, thirteen billion
22 21 years later, there's--there's a fair amount of--
23 22 secular philosophers oftentimes reject naturalistic
24 23 explanations of the mind. One doesn't have to be
25 24 religious, by any means, to believe that naturalism

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1 00098
2 1 intelligent design is not an explanation of the
3 2 origin of life in the sense of life going from
4 3 innate chemistry to living matter?
5 4 A I don't think that there's a complete theory there.
6 5 There's--that's my impression. Again, I mean,
7 6 I'm--I'm a philosopher looking at this literature
8 7 from some distance, but my impression is that
9 8 there's not a complete theory of how design figures
10 9 in at all stages of evolution, that there are some
11 10 gaps, some problems for Darwinists, and there are
12 11 some particular places where design looks like a
13 12 pretty obvious explanation where there are no
14 13 competing Darwinian explanations. So that there's
15 14 kind of the sketch of a--of an alternative theory
16 15 that's--that's available. But--but, obviously, a
17 16 lot of work still needs to be done to fill in that
18 17 sketch.
19 18 One other thing that I'd say here, too,
20 19 that seems to me to be important, and--and that is
21 20 that, I mean, one of the reasons that I take design
22 21 theory seriously as a possible explanation,
23 22 competing explanation, is that it seems to me that
24 23 you can make a fairly strong case for design in
25 24 cosmological evolution, the kind of anthropic

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1 00100
2 1 is inadequate to explain the mind, that you need--
3 2 that--that mind is something that requires a quite
4 3 different kind of explanation than modern science
5 4 and naturalism can--can provide.
6 5 So that at both ends of our thirteen-
7 6 billion-year history, you've got design that--that
8 7 oftentimes is--is argued for on secular grounds
9 8 rather than religious grounds. So that the
10 9 intervening stages of how life came to be and--and
11 10 biological evolution--that--that there are design
12 11 explanations which are now being made available
13 12 seems to fit a larger pattern than--so, in part--
14 13 that's one of the reasons that I take it seriously,
15 14 is that it--it fits that larger pattern, and you
16 15 don't just look at the--you don't have to just look
17 16 at the kinds of arguments that Behe makes about
18 17 cells. That's an important piece of the puzzle,
19 18 but--but the puzzle's a big puzzle.
20 19 Q Spanning thirteen billion years?
21 20 A Spanning thirteen billion years, yeah, that's
22 21 right.
23 22 MR. GILLEN: Let the record reflect it is
24 23 not a young earth.
25 24 THE WITNESS: Yeah.

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things when they're in tenth, and so on. And--and you have--you have to balance that with arguments that science educators would make about what the proper sequence should be in teaching students the sciences. And ninth grade isn't too early to give them some sense of what's at issue. So, you know, there are a lot of variables that you weigh when you decide what--what to teach them when.

But, yes, in principle, it would be nice if students were a little older and more mature and better able to understand some of the issues than they are in--in ninth grade. But then you might have to teach physics in ninth grade, and then you couldn't make the--they wouldn't understand some of the alternatives there. So, you know, I don't know how you sort that out.

If you would turn to the top of Page 8 of your report. The you make some statements here that I just need to have your help understanding. (Examines paperwritings.) Uh-huh (yes). Okay. You say, quote, "Because scientific theories can be confirmed they aren't mere speculation." I'm not quite sure what you mean by that. Do you?

Well, I think some people who talk about evolution

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--"to teach students that most scientists believe that neo-Darwinism is a confirmed theory." Yes.

And then you continue by saying, "Still"--which I interpret as kind of a "however"--"the distinction"-- (Examines paperwritings.) Yes, you're right. That's a still--that's a "however" "still."

--"the distinction rightly suggests that because neo-Darwinism is a theory, its confirmation rests not simply on observation"-- As do facts.

--"but on a wide range of complex considerations which are potentially open for reinterpretation." Yes.

Now, you lost me there, because I thought confirma--theories are confirmed by observation and not by a wide range of complex considerations. Oh. Facts--facts are things that we observe directly. Theories hinge on all kinds of things we can't observe directly.

So that--I mean, it's a fact that the cup is right here. (Indicating.) I can observe it directly. But that--the fact that the cup is made

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being--or, you know, Darwinism being a theory mean--mean to discredit it by saying it's mere speculation. So the scientific establishment has responded in turn that a theory isn't mere speculation and hypothesis, that the theories can be confirmed.

And I think that's a--that's a valid viewpoint. Theories can be confirmed. They can be confirmed more or less. And so, oftentimes, neo-Darwinism--or evolution, the idea--the theory of evolution is contrasted with heliocentric theory or the theory of gravity, which have so much confirmation that--that it's wildly misleading to suggest they're mere speculation. And I--and I agree with that.

So the--the effort on the part of--of some opponents of evolution to say that it's a--it's a--it's a mere theory, I think, missed the legitimate scientific point that theories can be confirmed.

Okay. And then you say, "I believe it is appropriate for science texts"--and, I assume, science teachers--

Uh-huh (yes).

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out of electrons and protons and neutrons and photons and, you know, all of those things--that's a theory. That's--that has to do with atomic theory. And--and I can't observe any of that stuff directly. That's a--that hinges on all kinds of scientific laws and--and complicated theories, which have implications for our observations but--but go way beyond our observations.

So that the theor--neo--neo-Darwinism as a theory rests on a whole set of complex considerations and complex kinds of arguments and--and evidence. We can't observe evolution. And--and that's important, because factual judgments can be confirmed directly by virtue of our observations; theories can be more or less confirmed, but they go way beyond our immediate observations.

So, most scientists, I think, believe that neo-Darwinism is a confirmed theory. Now, I would say probably--and I perhaps should have said that--that its confirmation has a high degree of probability for most scientists. Most scientists accept it as a confirmed theory.

But because--but there's still a point to

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1 00133
 2 1 the kind of objection that some people make to--to
 3 2 evolution, because its confirmation rests on a
 4 3 whole set of complicated considerations that are
 5 4 perhaps open to alternative interpretation, namely
 6 5 design interpretations.
 7 6 Q Okay.
 8 7 A But--but I think that students should be taught--
 9 8 you know, I'm not in favor of--of balanced
 10 9 treatment in the sense of giving equal time to
 11 10 alternative theories. And in my ideal biology
 12 11 textbook, you know, you don't give equal time to
 13 12 Biblical creationism, or--or just limiting us to
 14 13 scientific views, to design theory and to
 15 14 establishment science, but, of course,
 16 15 establishment science has got to receive most of
 17 16 the--the time and--and--pages in the textbook and
 18 17 hours in the--in the class. But you can't exclude
 19 18 legitimate alternatives.
 20 19 And so design theory has to be taken at
 21 20 least seriously enough so students are made aware
 22 21 of it and given, ideally, some sense of what it is.
 23 22 Short of that, the kind of disclaimer that Dover
 24 23 wants to have seems to me to be a very, very modest
 25 24 step in the right direction.

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1 00135
 2 1 textbooks somehow or another conveyed the idea that
 3 2 the--that the school board was on the side of--or
 4 3 was--was opposed to--to teaching--teaching
 5 4 evolution, in spite of the fact that the school
 6 5 board chose the textbooks, which, as he
 7 6 acknowledged, had hundreds of pages on evolution.
 8 7 So, I mean, it's ludicrous to attach that
 9 8 much importance to the sticker--which also, of
 10 9 course, means, you know, why are you--all so upset
 11 10 about it?--because it--it doesn't have that kind of
 12 11 cosmological import.
 13 12 But--but it serves the--the goal in a--in
 14 13 a kind of mini--minimal but important way of--of
 15 14 making students aware of the fact that there are
 16 15 alternatives. And that in itself is worthwhile
 17 16 even if it isn't nearly as--as--have the kind of
 18 17 substantial implications that it--that it should.
 19 18 I mean, as I said, I would have students
 20 19 learn something much more about the philosophical
 21 20 and historical issues relating to design and--and
 22 21 methodological naturalism and neo-Darwinism than
 23 22 is--than is usually done, but at least make them
 24 23 aware of the fact that there's a controversy.
 25 24 Q Okay. The controversy that you're referring to in

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1 00134
 2 1 Q Under the heading "The Present Case"--
 3 2 (Examines paperwritings.) Yes.
 4 3 Q --you say, "By making students aware of the
 5 4 controversy surrounding Darwin's theory of
 6 5 evolution, including IDT, the Dover School District
 7 6 is promoting legitimate, secular, pedagogical goals
 8 7 and enhancing their science education and student
 9 8 learning." Given some of the ambiguities,
 10 9 inconsistencies, problems, and gaps that we've
 11 10 noticed in the--
 12 11 Yeah.
 13 12 Q --board's statement, and the fact that it is just
 14 13 read and then abandoned for the rest of the--
 15 14 Yes.
 16 15 Q --semester, do you think this might be an
 17 16 overstatement here?
 18 17 A (Examines paperwritings.) It is promoting a
 19 18 legitimate, secular, pedagogic--pedagogical goal,
 20 19 and it is minimally enhancing their science
 21 20 education and student learning.
 22 21 I mean, you're right. It's--it's--you
 23 22 know, I--I think Judge Cooper's decision was
 24 23 ludicrous because he thought that that little
 25 24 disclaimer that they pasted in the Georgia

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1 00136
 2 1 this statement--
 3 2 Uh-huh (yes).
 4 3 Q --that we just quoted is as to whether there is or
 5 4 is not purpose underlying life?
 6 5 A It's--it's the--it's to make them aware of the
 7 6 controversy regarding design explanations in
 8 7 biology, yes, that--that there is an alternative
 9 8 theory for understanding nature that--that involves
 10 9 design explanations, yes, and so is--you know, I
 11 10 want it to be much more substantial than it is
 12 11 to--to really serve the purposes of liberal
 13 12 education. But it--but it--it serves the minimal
 14 13 purpose of alerting them to a controversy that's--
 15 14 that's real and that's important.
 16 15 Q And that's the contro--the controversy is--
 17 16 Is--is over whether design explanations have a role
 18 17 in biology.
 19 18 Q And by "design explanations" here--
 20 19 Uh-huh (yes).
 21 20 Q --we're using it not in the sense of design of a
 22 21 particular bacterial flagellum but rather in the
 23 22 broader sense of "Is there purpose to life?" Is
 24 23 that--
 25 24 MR. GILLEN: Objection to form.

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Isn't that what you mean?
The--the two are related, but, I mean, intelligent-
design theory, insofar as it holds that there are
design explanations that are--are plausible, that
are reasonable explanations, is compatible with and
open to the possibility, then, that there is some
kind of larger design in nature. It's also open to
the possibility that there's a supernatural
explanation, but it doesn't require any of those
things.
But--but, yeah, I mean, I think that--
that the--that the controversy is over whether or
not--that--the--the underlying principle is that
when there's a controversy, students should be made
aware of different points of view.
Now, there's a controversy over
evolution. Some of the points of view are
religious. And I think they should be included
at--at some point in the--in the curriculum.
Where, is an important question, obviously.
But there are also--there is also a--a
scientific controversy, at least if we are willing
to have a somewhat broader definition of science
than establishment science holds. There's a

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actions of atoms?
Yeah. I mean, that's what--that's what makes the
controversy important to most people. And--and I
can't--I don't know what--I've not talked with and
I've not read what the school board said about it,
so I--you know, I can't speak to--to that.
But, for most people, undoubtedly, that's
why it's important. That's not the only reason or
maybe even--I mean, that's one--one reason why
students should be educated about the controversy.
But the other reason is because there is
a debate, a controversy, among scientists about
what counts as a good and an adequate scientific
explanation. And that controversy in and of itself
is important enough to warrant refu--reference to
intelligent design, I think, in--in the curriculum.
Now--now, many people, no doubt, would--
would say, "I could care less about this--this
debate among scientists and--and who gets to count
as scientists and who doesn't. I believe what
Genesis tells me." I--I mean, of course. And
that's why this debate is so important to many
people.
But that's not the only reason it's

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controversy about that, what it means to be
scientific. And students should inform--be
informed about that.
And--and then the controversy is, do
design ex--are design explanations legitimate? I--
I think, since there is a respectable case that can
be made for that, that students need to be made
aware of it. "Respectable" meaning, as we talked
before, in terms of arguments and evidence cited by
people who have credentials in science and who use
other aspects of science as--as--in the process of
being scientists, who--who don't flatly reject
everything that science has to say, and that aren't
incompetent and un--uneducated in establishment
science.
Let me see if you can agree with this--
Okay.
--statement: Throughout your opinion, you have
referred to significant disagreement and important
controversies. Isn't it true that what makes the
controversy important is the implications as to
whether there is a meaning to life--
Uh-huh (yes).
--other than sheer random, unguided, purposeless

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important. And--and the warrant of references to
intelligent design, and ideally some discussion of
it, stem from the fact that there is--there is a
serious intellectual controversy among scholars,
credible scientists, and philosophers who--some of
whom are secular, not--not religious, about the
nature of design in--the nature of design in
nature, the--whether--whether there's design in
nature. And, as I said, not just in biology but
also in cosmology, and also in how we understand
the brain and the mind, and in other areas of
science.
So it's not just this case, even though
that's the one people pick up on 'cause that's--
that's the one that is personally--it's a part of
our culture wars.
Do you believe ninth-grade biology students should
be taught that man and the species as we know them
today did not gradually evolve from other life
forms but appeared suddenly in the historical
record?
If you mean should they be taught that that is
true, the answer is no. That--that would be, in
fact, an endorsement of a religious worldview, and

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it would be unconstitutional and would also be--if
 mean it's a deeply controversial position held by
 a minority of scholars.
 So, no, they shouldn't be taught that
 that's true. But as I said earlier, it seems to me
 that an introductory biology text, whether in
 undergraduate school or in high school, should
 locate biology within historical and philosophical
 controversies, so that if students are to be
 liberally educated, they appreciate the tensions,
 the conflicts, the overlaps between various ways of
 making sense of nature.
 So, yes, I think a Biblical text--I
 mean--Biblical--a biological text--which is a
 Biblical text to some people--a biological text
 might well say something about creationism and
 Genesis--not much, but a little--talk about the
 differences between that and intelligent-design
 theory, talk about other ways, maybe Lamarckian
 evolution--
 Would it be okay--
 --so--
 --for a text, and teachers teaching in accordance
 with the text, to explain to students that, you

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That is to say that when we locate students in
 con--in--when we locate contemporary science or
 contemporary economics or whatever in the larger
 cultural conversation, students shouldn't just be
 presented with alternatives like our cafeteria
 line, again. They should be given some sense of
 what the--what the majority positions are, what the
 minority positions are, and for whom.
 So, yes, I think sci--I think students
 should be taught in biology classes that the
 majority--the vast majority of scientists hold to a
 neo-Darwinian view, but that not all of them do.
 And I would, you know, want to convey the
 idea that--that, of course, many scientists don't
 deal with biology and neo-Darwinism, but of those
 who do, the vast majority hold to neo-Darwinism;
 but it isn't the only view, and--and there are
 people who raise questions about it who have
 credentials as--as scientists, and so you need to
 learn something about it.
 You don't give equal time to the two
 points of view. Of course, the dominant
 establishment view gets the most time and the most
 pages in the textbook. But the other point of view

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know, for a long time, Western man thought that God
 created the earth and everything in it just the way
 the Bible said--
 Sure.
 --and that notion has now been scientifically
 discredited by everything we've come to understand
 through study of the fossil record and the nature
 of life processes?
 No. I--I think probably it would be const--legally
 wise to--to qualify that last judgment and say that
 most--many scientists--most scientists--
 Ninety-nine-point-four--
 --believe something--believe something otherwise--
 Ninety-nine and forty-four--
 --right--than simply say--
 --one-hundredths percent?
 --than simply say the Bible is wrong.
 But it--it would be okay, in your view, to teach
 that ninety-nine and forty-four one-hundredths
 percent, or whatever the number is--
 Yeah.
 --think that that's--
 I argue, in--in that book and elsewhere, for what I
 call the principle of cultural location and weight.

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has to be mentioned. It has to be acknowledged.
 MR. WILCOX: Thank you very much.
 MR. GILLEN: Thank you, Chub. Thanks,
 Warren.
 (WITNESS EXCUSED)
 (WHEREUPON, THE DEPOSITION WAS CONCLUDED AT 12:38 P.M.)